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SEPTEMBER 1958 35c

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DETROIT

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SEPTEMBER, 1958

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NEXT MONTH

'59 Buick Road Test

Four Imported Car Tests

How to Budget Your Custom

MOTOR TREND



THE COVER:

With the '59 models scheduled for extra-early introduction this year, speculation is rife as to the changes which will appear. We join the guessing game and give you a conjectural drawing by Stan Mott.

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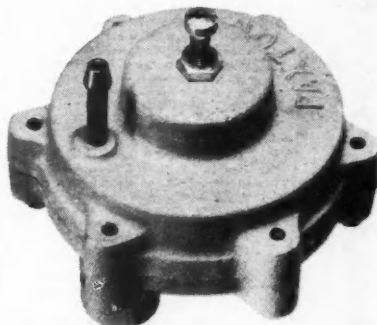
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MEMO FROM THE EDITOR

THE NUMBER NINE in '59 has a sort of magical quality to us at MOTOR TREND. It could stand for the culmination of nine years of publishing "The Car Owners' Magazine,"—and incidentally the start of the 10th year. Or, it could stand for the number of editorial and art staff members—there are nine of us—who are responsible for bringing out each issue, starting with your editor, Managing Editor Erv Rosen, Detroit Editor Bill Callahan, Associate Editor Wayne Thoms, newly-appointed Technical Editor Chuck Nerpel, Editorial Assistant R. Yamazaki, Art Director Al Isaacs, Assistant Art Director J. Bryce Gillespie, and "Gal Friday" Virginia Spicer. (Of course, this doesn't count the other people from the photography, advertising, circulation, etc. departments.) It also could stand for the fact that with the passing of the ninth month of almost any calendar year, we embark on our program of bringing you the lowdown on the new cars (see page 16). The new cars of the previous year now are no longer "new," nor are they "news."

With the next issue we'll have achieved an editor's delight: simultaneously with the announcement of the first of the '59s to be shown, we'll have not only a cover of the car but a *complete road test*. From all appearances, this car should not only make a startling comeback in '59, but will apparently be one of the most striking of the year.

And we certainly don't intend to stop here. While we've got the bit in our teeth, we're racing on to other equally intriguing stories about the new cars in coming months. Unfortunately, we cannot divulge too much about our plans at this time, but we have every reason to believe that you will concur once you've seen the issues.

We feel that our road tests have been consistently the most unbiased and truthful of any published. Sometimes they are not as complete as we would like because of space limitations, but when they are cut down it is for the reason of giving you as broad a knowledge about as many different kinds of cars as possible. We are not limiting ourselves to American production cars; we will test (as we have in the past) imported cars of every variety from minicar through economy car, sportscar, to sports-racing cars. In fact, there's hardly any type of machinery we won't test.

Some of the other testing programs that MOTOR TREND intends to initiate, starting with the '59 models, cannot be divulged at this time. We'd like to tell you, but we think we have a program mapped out that is different from that of any other publications and so will necessarily have to announce it at the time we kick it off.

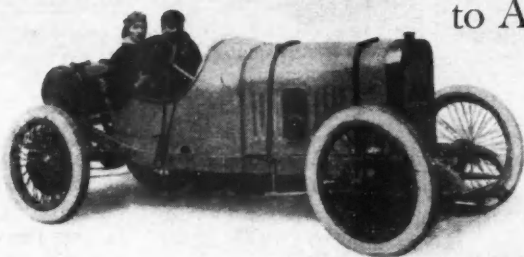
And while we're on the subject of testing, it might be well to call your attention to our ever-expanding program of accessory testing, which we label "Product Use Tests." In July we had three, in August we had four, and this month we have five. As long as the accessories (and our space) hold out, we will continue to give you our opinions of the latest ones to hit the market. Incidentally, you can be of help to us by telling us what *you* would like to see tested in future issues. Send your suggestions to: Product Use Editor, MT.

WITH THE ALMOST-PHENOMENAL EXPANSION of the West in recent years (a University of Southern California professor in Commerce predicts Los Angeles will have a population of 7.7 million in 1965 and 10.3 million in 1975!), and with the growing significance of Alaska's statehood, people in the West are becoming more conscious of the as-yet-undeveloped areas and new industries that are flooding into the Western states.

We too are aware of this growth, and to keep pace with it, are launching a complete 16-page supplement bound into the regular edition of MOTOR TREND for distribution to readers in Washington, Oregon, California, Nevada, Idaho, Montana, Wyoming, Utah, Colorado, Arizona, New Mexico, Texas, Alaska, Hawaii, and Mexico. This special section will deal with the people, the places, the events, and the industries of the West; we're sure you will find it interesting.

Art Rosen

1913...PEUGEOT introduced the modern small, fast engine
to American racing
in this Indianapolis
Speedway winner!



Now in 1958...

PEUGEOT comes over from France again
with this excitingly sensible Sportsedan!



SPECIFICATIONS

Engine: 1,468 cc.
Bore and Stroke: 80 mm x 73 mm
Compression Ratio: 7.5
Cylinder: removable wet liner
Cylinder Head: hemispherical combustion chamber
Valve Arrangement: overhead
Brake Horse Power: 65 at 4750 rpm
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Overall Width: 5 ft. 6 in.
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U.S. CARS FOR U.S. LIVING

Dear Sir:

I would like to light a candle for Detroit-built autos, even against a rising trend of snob appeal of foreign-built models. My thesis is that the U.S. auto is the best in the world and is the best adapted to U.S. living habits.

The fellow who claims it is ridiculous to use a 4000-pound car to go a block away to get 10 pounds of groceries is absolutely right. Has he forgotten how to walk?

The same fellow will agree, though, that Americans consider it one of their privileges to hook up the boat and trailer and travel perhaps 200 miles to the lake for a weekend outing, or to take the whole family sight-seeing through the West or New England during their vacation, or to gather up the neighborhood children for a swim in the pool on a hot summer day, or to take the family and pick up Grandma and Grandpa to go to that auction in the next county.

It seems to me that the American way of life calls for an American car. This is what people really want, but they have been carried away by a kind of mob hysteria creating a "hate U.S. cars" attitude. Sure, the foreign cars are nice, but how does that detract from the Detroit jobs, which have a definite place in our way of life?

J. R. Brown

Pittsburgh, Pa.

Gentlemen:

There is one development that I am extremely concerned with. That is the increasing sales of small, basic transportation cars in this country. I have been watching this closely and it is beginning to bother me.

To me, these small cars symbolize the increasing tendency of Americans toward thinking small, living dull, humdrum lives, and simply existing but not really living. (By a small car, I do not necessarily mean small in dimensions. A sports car is small, but the buyer gets one for fun and adventure.)

There is no doubt that they are more economical, and anyone who tries to argue

this point simply makes a fool of himself. The point is—who wants that economy? The economy factor is pointless to the average American who can afford a better car.

There is nothing wrong or impractical about the cost, size, speed, or anything else, of a big car. The problem lies in the failure of other facilities to advance with the auto industry. If cars are too fast for the roads, or too big for garages, etc., we should improve those things—not restrict the cars. This is progress.

Tony Hoover

Salamanca, N.Y.

Gentlemen:

Why anyone in his right mind would spend good money for a foreign car when he can buy a good standard American make is beyond me.

Foreign cars are sub-standard in size, sub-standard in comfort and room, sub-standard in appearance. They (most of them) are the most unlovely things I have ever seen, and most of them are very low-powered on top of that.

They talk about the gas mileage on these foreign cars. If a man is in such dire straits that he can't afford gasoline, he should buy a bicycle.

Art Voland

Beekemeyer, Ill.

Gentlemen:

After carefully sifting both the foreign and American cars for a small, lightweight, safe second car—to be used for going to work, shopping and in connection with hobbies, such as hunting, fishing and boating—I have purchased a 1958 Willys Jeep Dispatcher.

In your quest for an economical, practical, small American car, please don't overlook this little two-wheel drive, four-cylinder, 60-horsepower, 126-inch gem. For the many who have similar needs, I feel that this car is the answer and deserves a little of the free publicity being given to its many little brothers from overseas.

Dave Riehl

Honolulu, Hawaii

WHAT WAS IT?

Gentlemen:

I discovered this car on a farm near Woodstock, Ill. I thought some of your readers might have fun identifying it.

The faint remains of a number on the radiator indicate that the car might have done some racing. It had a four-cylinder overhead-valve engine, and the original clutch was cone type.

While I was dickering on the price, a man came and drove it away for \$300.

Fred R. Stahmer

Antioch, Ill.



DOESN'T WORK BOTH WAYS

Dear Sir:

It appears British cars are gaining popularity in the United States, but not so with American cars here.

I have been the owner-driver of a Packard in England for over three years and have had no peace for the whole period, harassed by abusive motorists on the road, together with the law. You do not have to do any wrong—you have already done it.

My advice to tourists and GI's visiting Britain is to leave your car behind, or fit it with as many good mirrors as possible.

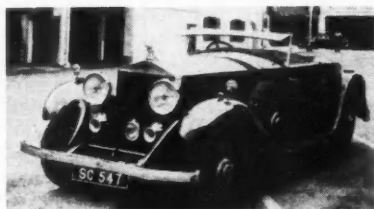
I personally feel this hostile attitude very keenly, as I am greatly attached to my Packard.

Pete G. Gooch Basiloon, Essex, England

MEET "MAXMILLIAN" FROM MALAYA

Dear Sir:

In Malaya there is an energetic Vintage Car Club, whose enthusiastic members drive their de Dions, 90-mph Peugeots, Green Label Bentleys and old Rolls-Royces through the



jungles to meet once every three months for a rally, where they exchange motor talk over a sumptuous curry tiffin.

I myself am the proud owner of a fine old 1931 Rolls-Royce Phantom II 40/50-horsepower two-seater, an open coupe specially built for the Italian honeymoon of the Secretary of the British Car Manufacturers' Association. The engine of this huge car purrs at 350 revs per minute—it is, in fact, so versatile that, as the story goes, in top gear at dead slow speed, the driver can climb out, walk around the car and get in again on the other side, then step on the gas and accelerate to 80 mph. I am enclosing a recent photograph of the car, "Maxmillian," who, I think you will agree, is most photogenic.

If any of your readers are keen vintage car owners and can spare the time to write to a far-distant country, I shall be very glad to correspond with them.

M. J. Taylor

1 Dunman Road
Seremban
Negri Sembilan
Federation of Malaya

CORRECTION, PLEASE!

Dear Mr. Woron:

We at the John Green Corporation, as well as Renault and Peugeot distributors, wish to compliment you on the wonderful story on the Peugeot 403 in the August issue of MOTOR TREND.

However, I would like to bring to your attention a couple of facts which bear correction: 1) The Peugeot has a 65-horsepower engine and not a 58 as reported; also 2) for the record, 43 per cent of all the taxis in Paris are Peugeots.

Len Weissman John Green Corp.
Adv. & Public Relations Los Angeles

here's the
value story
that really
holds
water!



Don't miss the boat on the greatest 5-door Estate Wagon value ever to hit our shores. This British beauty is TR3 engineered... averages 60,000 miles without a major overhaul... does up to 78 miles an hour... gives 40 miles to the gallon... seats the whole family with plenty of room... or fold down back seats for 38 cu. ft. of space, with full rear door access. Be crafty, guest drive the Estate Wagon (or 4-door Sedan at \$1699*) today. Write for our Overseas Delivery Brochure. STANDARD-TRIUMPH MOTOR CO., 1745 B'way, Dept. DS9. N.Y.C. 19.

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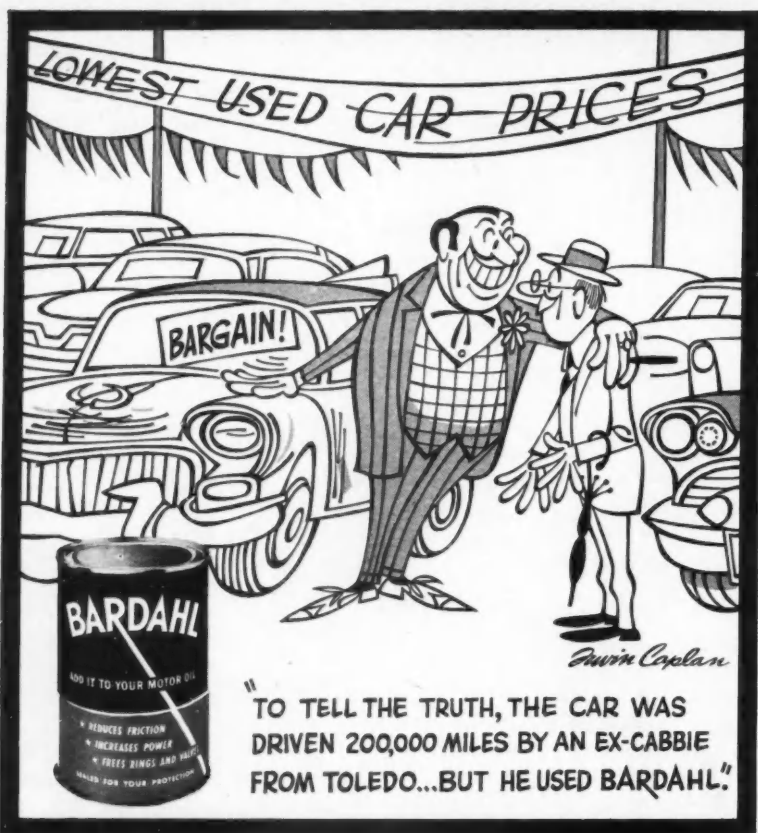
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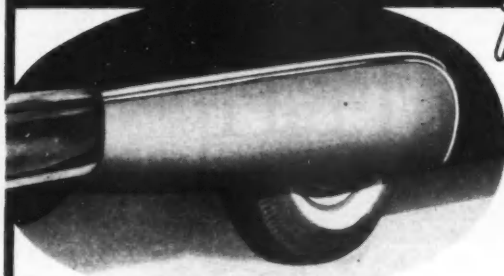
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"A much smaller torque converter type transmission has been developed which will eliminate much of the hump in the center of the front compartment. The new unit is not much larger than the manual transmission."

FALSE — Much development work is aimed in this direction but heavier fluids will be required to make them feasible. Heavy fluids are available but so far have not been approved.

"Chevrolet will offer a snazzy open-type station wagon similar to the Ford Ranchero, or that type, probably in its 1959 line."

TRUE—It is generally agreed at Chevrolet that the Ranchero offers an area of competition for which Chevy has no present answer, so a comparable model seems imminent.

"A central hydraulic system that will provide power for brakes, window controls, steering and other power units in the modern automobile will soon be offered as standard equipment by some car makers."

TRUE—But not so fast. A centralized hydraulic system has been under development for some time but we still think it is a year or more away.

"Sales of imported cars in the United States are leveling off and may not reach 10 per cent of the total market in 1959."

TRUE—According to a recent nationwide survey among automobile dealers conducted by *Automotive News*, which points out, however, that while East and West Coast markets may be steady, a huge Midwest market is still to be cultivated.

"Because of unsettled labor conditions General Motors has cancelled its plans for revival of the Motorama in New York this fall."

FALSE—A serious strike would undoubtedly force a cancellation but present plans still call for a Motorama in mid-October.

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SPOTLIGHT ON



by Bill Callahan Detroit Editor

PLANNED OBSOLESCENCE, sometimes referred to as "Built-In," or "Dynamic Obsolescence," has been the backbone of American industry and progress since the beginning, yet when the term is applied to automobiles, critics read into it something sinister and evil. "The annual cost of new models changes," they opine, "is unnecessary and merely adds to the growing cost of automobiles. Designs should be frozen as in Europe."

IN DEFENSE OF AN INDUSTRY which creates employment for one out of every seven workers in the nation, we would like to make the following points:

1. Most critics *assume* that annual model changes go only skin deep and are instituted largely by stylists.
2. They also assume that no mechanical modifications or improvements are incorporated into cars during a model run but are deliberately withheld until another new model can be "foisted" upon the public.
3. They misconstrue the term "planned obsolescence" as deliberate effort on the part of car makers to design and build products that will rapidly deteriorate and force replacement.

WE'D STILL WEAR STOVEPIPE HATS if the clothing industry had frozen its designs in Lincoln's day. Refrigerators would also still sport the almost forgotten

birdcage-motor atop if makers had considered early designs good enough.

CRITICS COMPLIMENT CAR MAKERS when they accept current car designs as so nearly perfect to warrant freezing at this point. Car makers don't think so; they envisage far different cars for the future. Research, engineering, design and styling now in progress will be reflected in cars two or more years away.

LET'S LOOK AT FACTS: When General Motors decided to adopt the wrap-around windshield, the change was not made for styling purposes. The design provided much better vision for the driver. Changes not obvious from the outside required completely new engineering, design, and construction in front and rear body pillars and in roof structure. As an example, some 30 parts comprise the side frame of a Fisher body. These parts must be carefully assembled and joined. To change any one of these means refitting all. (A complete body has approximately 4000 parts.)

FACE LIFTING IS A FALLACY to the extent that it is next to impossible to effect reasonably modest style changes without running into needed engineering or structural changes. It's something like trying to add 1/8-inch to a fellow's nose without changing his whole face, and probably his basic personality.

CRITICS ARE PRONE TO CONFUSE the addition of twin headlights in 1958 cars

with styling. Actually, the problem of supplying ample illumination for high-speed night driving has been studied since the inception of the automobile. As early as 1933 the Society of Illuminating Engineers concluded that adequate illumination could not be obtained without separate lamps for high and low beams. In 1939 the Sealed Beam unit was introduced—which was a big step up. This was further improved in 1955 but still fell short compared with the four-light system.

ANNUAL MODEL CHANGES, it is true, are designed to make the previous year's model obsolete in the eyes of its current owners. This, definitely, is planned obsolescence and, of course, the appeal of the NEW models is largely tied in with new styling. On the other hand, each new model year invariably brings its crop of mechanical and engineering changes. Each new model also brings its quota of improvements in quality, performance, handling ease and safety factors; there is no built-in debility.

AVERAGE CAR LIFE IS 13 YEARS, or 115,000 miles, during which a car changes hands many times. A little over two used cars are purchased for every new car sold. To the used car buyer a newly purchased 1956 model is a *new* car. To whom would he turn for a source of supply if annual models were not sufficiently changed to entice owners to accept the heavy burden of one- or two-year depreciation in order to drive a brand-new car!

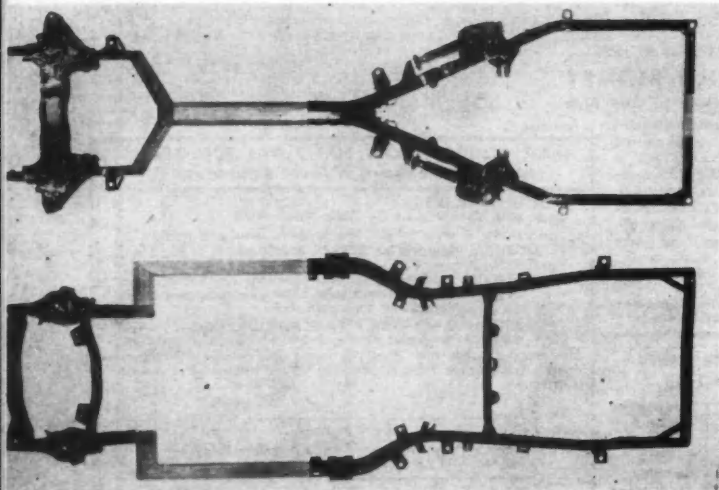


FIG. 1
Future frame designs and engine-transmission placements could mean more passenger space.

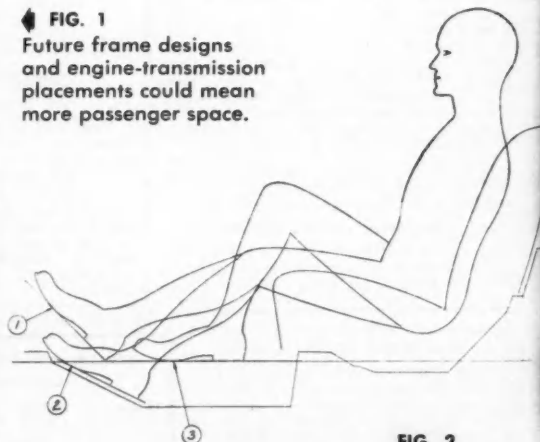


FIG. 2
Seating comfort, related to foot position, is dependent on styling.

BUILDING BETTER CARS in line with what it thinks the American public wants has been a policy of the industry over the years. As stated earlier, public likes are determined by what the public will buy. Automatic transmission, power brakes, power steering, air conditioning, power packs and the like are available only because the public has demanded them.

STYLISTS ARE CONVINCED, and sales figures would seem to bear them out, that public taste runs to longer, lower cars. Demand for lowness has put a lot of pressure on designers and engineers but it also has put quite a squeeze on customers as well (Fig. 2). We wonder just how much comfort buyers will sacrifice just to be stylish or whether the public thinks in these terms. The present-day car is about 18 feet long and six feet wide. In plan view this covers an area of around 108 square feet. The usable passenger space from toeboard to rear seatback is around six to eight feet. This means that only about one third of the area covered by the car is devoted to passenger space. Even in the flat-roofed designs, passengers are crammed together a little too cozily.

SIMULATED SIX-PASSENGER cars that in practice will accommodate only four are what we really have as a result of current serpentine styling (Fig. 4). The center seats—both front and rear in most cars—are practically useless for

long trips except for legless adults or children because of the transmission hump in front and the driveline tunnel in the rear. The latter, of course, also limits the amount of padding that can be applied at this point (Fig. 3).

WRAP-OVER WINDSHIELDS that enable the driver to spot low-flying airplanes are another concession to lowness. At a recent visit to the new Ford glass plant at Nashville, Tenn., members of the press were given an insight as to why these compound contoured sheets of plate glass cost so much. Huge sheets of plate are run in a continuous line through a 1900-foot grinding and polishing operation which has 64 huge grinders and 102 polishing units. Sheets are then cut, paired, laminated with a vinyl plastic binder and bent into intricate contours. They are then cooked in hot oil under pressure to remove all opacity from the vinyl binder. If either of the two sheets is broken or damaged during this process, both must be discarded.

THE INDUSTRY HAS ANSWERS to the comfort problem in lower cars but the question is who will be the first to take the big step. One answer is the "trans-axle" with transmission and axle combined in one unit. In this design the rear wheels would be independently sprung in some form of de Dion design. The transmission location would be fixed in relation to the car body or frame providing a fixed angularity for

the driveline (Fig. 1). In this way the tunnel in the rear could be lowered by the amount of space now provided for rear axle jounce, or up-and-down movement. Another approach would be a combined powerplant and transmission mounted either in front and driving through the front wheels, or in the rear and driving through the rear wheels. Both designs have drawbacks but neither is impossible.

LOWER CARS WITH COMFORT will come as a result of year-to-year new car advances. As we said previously, sales figures would seem to confirm stylists' conclusions that lower cars are what the public wants. The car of the future will have advantages that outweigh current disadvantages but these advantages would be lost if car design were frozen as of today.

STYLING IS IMPORTANT to Americans and plays a big part in the dynamics of merchandising which keeps industry wheels turning. It provides millions of miles of transportation in acceptable style for second and third or more owners whose vehicles have suffered no more erosion than that the *newness appeal* has worn off in the hands of the original buyer. This is planned obsolescence and we don't think it is bad. Whether the public and the stylists are right is anybody's guess. Consider the gal who buys an expensive form-fitting bra and girdle and then tops off the ensemble with a sack dress. /MT



FIG. 3 Center seat over driveline channel has limited padding; riding comfort suffers.

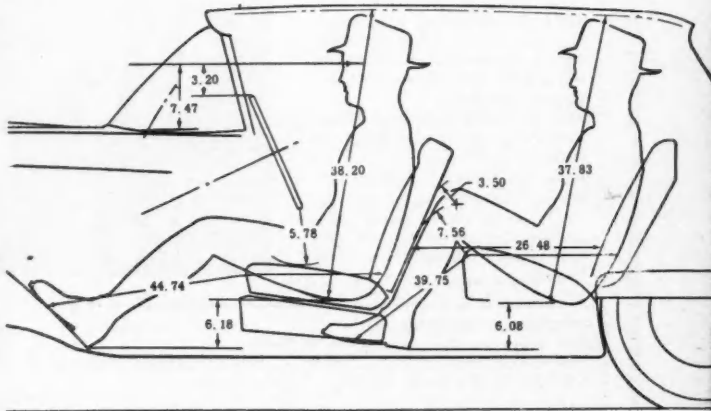


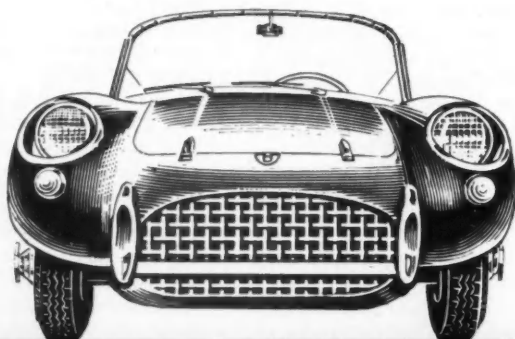
FIG. 4
Lower roof lines and driveline humps have taken their toll in cramped rear seat passenger space.



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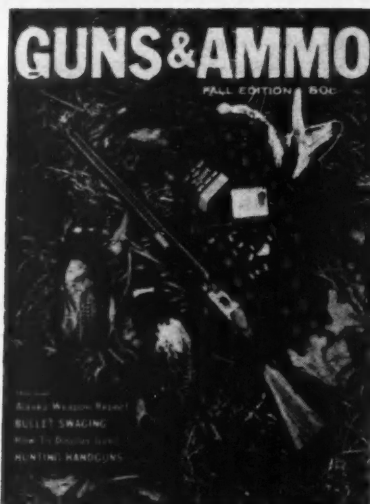
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Nitske traces Porsche's life from humble beginnings through his identification with Lohner, Austro-Daimler, Daimler-Benz and to the establishments which bore his name. The book goes beyond biographical elements, tracing the auto industry in Europe to the present day with special emphasis on postwar Volkswagen production.

At \$5.00, from Comet Press, 200 Varick St., New York 14, it provides excellent reading with much historical reference.

The Invisible Killer is the title of a film produced by the Automotive Exhaust Research Institute on the dangers of carbon monoxide from faulty exhaust systems. It points out in dramatic fashion what the motorist should do to combat this hazard both on the highway and in the garage.

There is no charge for organizations to borrow this 16mm film. It may be obtained by writing to Sterling Movies U.S.A., Inc., 6 E. 39th St., New York 16.

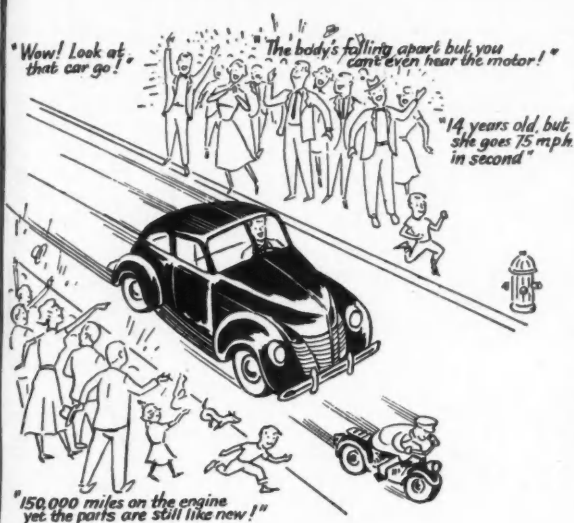
One of the most informative technical bulletins we have ever seen, *British and European Passenger Cars and Sports Cars*, has been published by an American oil company, Quaker State. It deals extensively with lubrication data for all makes, and includes engine specifications, illustrations and descriptions of various imported engines and a multitude of useful conversion tables. In addition, there is a breakdown on the international sports and Grand Prix racing formulae. Designated as Bulletin P-952, it is available at no cost from the Automotive Research Laboratory of Quaker State Oil Refining Corp., Oil City, Pa.

An informative technical booklet, *Dunlop Car Disc Brakes—Descriptive and Maintenance Notes*, about the brakes as installed on the XK-150 and 3.4-liter Jaguars, is currently available from Jaguar. Fully illustrated with charts and cutaway drawings, it should be of great interest to repair shop owners interested in correct servicing procedure.

There is no charge for the book, but 50c in coin to cover handling should be remitted to Jaguar Cars, Inc., 42-50 21st St., Long Island City 1, N.Y.

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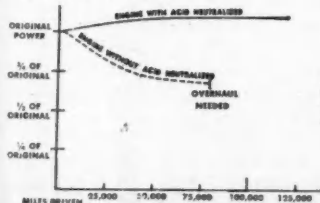
Your oil will last longer! You can not only change less often but also get more miles per quart in between. See for yourself! Put samples of your oil in 2 open Pyrex baking cups and heat to 300°F in a GAS FIRED oven—one with the Magna-Power and one without. After 2 hours, shut it off and allow to cool for several hours. Start up the oven again and repeat the whole thing. Keep repeating until 15 or 50 hours of high temperature have been run. (High priced oils may need longer.) Examine the oils and put a drop of each on a white blotter for comparison. The spots below show the vast difference in oil breakdown.



Two oil spots—one with Magna-Power, one without! These came from the same can!—a well known, nationally available, top grade brand. See text for test conditions. This is the same thing that happens in your engine. The oil warms up in contact with hot blow-by gases—the moisture condenses in the oil, makes acids and breaks down even the best oils.

2. POWER

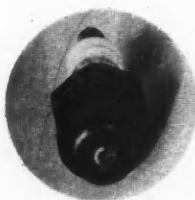
Engines maintain full power (or actually increase)—for amazingly long mileages. Many have 180,000 to 200,000 miles and more—WITHOUT ANY MAJOR OVERHAUL.



Measurements show reductions with Magna-Power of 3 to 1 or better under the same conditions.

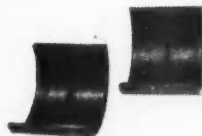
3. IGNITION

Actual experience shows that your spark plugs should last 2 or 3 times as long as now when they are not fouled by the filth and goo that normally collects in your oil—dissolved in it, so the filter cannot remove it.



The plug shown is 1 of 8 with 61,810 miles on them and still showing nearly new efficiency. One engine has gone 188,438 miles so far on 2 sets of plugs—it is still in top condition!

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As one Magna-Power fan wrote: "There is no excuse whatever for a man to change oil every 2000 miles if he knows there is such a thing as a Magna-Power antacid neutralizing drain plug." And, of course, that fan's 13-year-old Chevy is his pride and joy—and is never in the repair shop—except for minor tune-ups, lube jobs, etc., then presto! On one oil change the entire \$4.95 saved—and his engine protected against acid corrosion—runs like a clock—quiet as a watch—"powerful as a B52"—a car with an engine that will not let you down—that actually increases in power, pep, speed and performance the older it gets. More automotive engineers, oil chemists and mechanical engineers have installed Magna-Powers on their engines than any other proportionate group of our population. And thousands of Magna-Powers have been bought by critical people in the past 9 years—people who save hundreds of thousands yearly—and, more important, get for themselves increased trade-in allowances amounting to hundreds of dollars for turning in mechanically perfect cars.

WHAT IS MAGNA-POWER?

Magna-Power is the new direct way to kill acid. Acid is the real cause of engine wear. The oil companies are spending millions to add acid neutralizers to their oils but these are not permanent.

WHERE DOES THE ACID COME FROM?

Gasoline has sulphur in it. When sulphur burns it makes sulphuric acid right inside your engine. Sulphuric acid eats metal. It destroys detergents and spawns more acid. Little by little the engine is eaten away. Acid is one of nature's methods of reducing metals to their original primitive state.

HOW TO NEUTRALIZE THIS ACID?

The easiest and surest way is to use a solid chemical neutralizer attached to your oil pan drain plug. The Magna-Power is a drain plug with a rod of special alkaline metal alloy. Acids much prefer this naturally alkaline alloy to the other metals in the engine; but in eating it these corrosive acids are destroyed. Yet there is enough alloy to last 100,000 miles.

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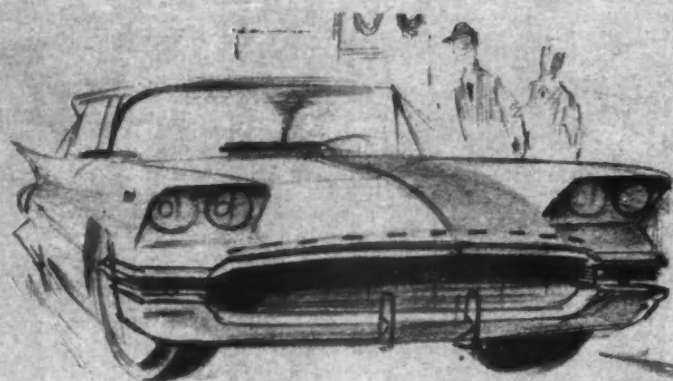
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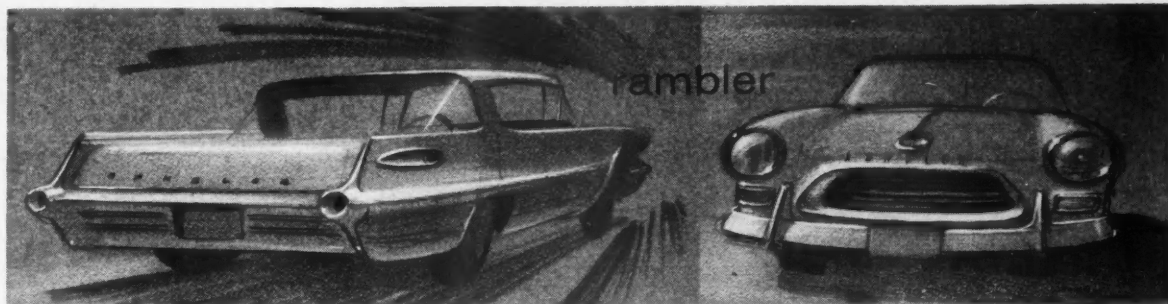
'59 CARS



Studebaker-Packard

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AMERICAN MOTORS will not make extensive changes in any of its Rambler lines for 1959. Rambler and American have enjoyed excellent acceptance in the market place in 1958 based upon the "compact car" concept. The company's philosophy is that of limiting model changes to functional needs so far as

possible. It is generally felt that any styling changes effected would be largely for the purpose of providing model year identification and will be limited mostly to grilles, possibly headlights and tail lights. The Metropolitan, built in England, probably will not be changed in basic design or styling.

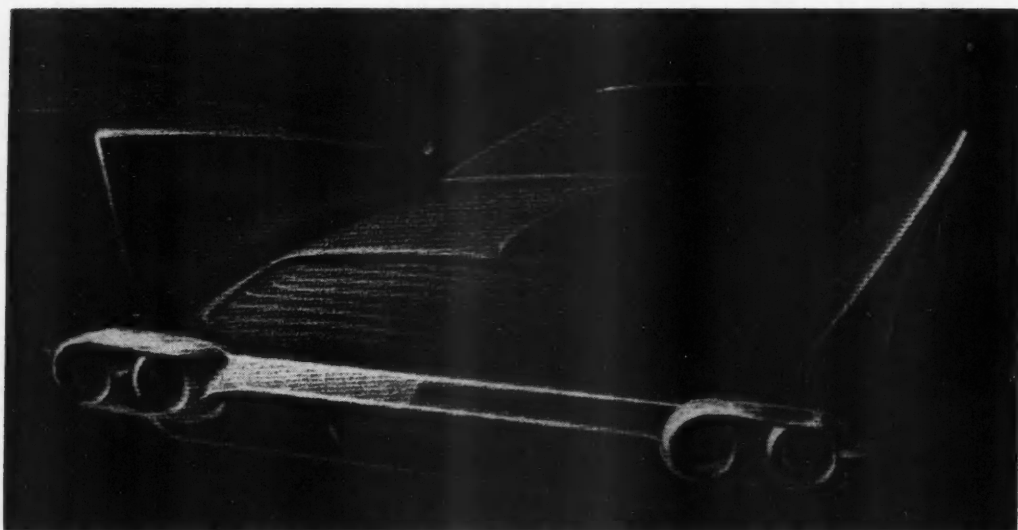
American Motors

CAR MAKERS HAVE BET \$1.5 billion in sweeping changes for 1959 models in the hope of loosening latent buying power that has built up during recent months of lagging sales. While much of the money has been spent to create new appearance appeal there will be the usual emphasis on more efficient engines and transmissions to provide better economy.

Evolution, not revolution, is still the watchword and each line will retain identity with previous offerings. It is interesting to note, however, that more and more, the industry is designing quick identification and individuality into the rear decks of its vehicles as well as in the front. Not long ago much emphasis was placed upon selecting a distinctive radiator while rear ends looked quite alike.

With announcement dates of the new models not more than a few weeks off from the time you read this, here are our conjectures (in word and sketch) of what you'll soon see.

hawk



STUDEBAKER-PACKARD'S big switch for 1959 will be its entry into the compact car field with a "smaller" but not small car. Best dope is that about the only parts of the Scotsman which will be used in this car will be possibly the present door and a modified version of the present

Scotsman six-cylinder engine. Wheelbase will be 108.5 inches, which puts it in the Rambler class. Studebaker Hawk series will not be greatly changed but other Stude models and the Packard line, as indicated in "Rumor Mill," August MT will be discontinued, according to reports.

ford

'59 CARS *continued*

FORD LINES for 1959 will be longer, wider and generally bigger than ever. Ford wheel-base has been increased from 116 to 118 inches. Overall length has been increased six inches and overall width by approximately two inches. The air scoop is gone from the front of the hood, the grooves have been removed from the roof, which also is much flatter, and the rear deck no longer has the deep valleys à la Thunderbird. Glass area has been increased although the wrap-over of the windshield is not so pronounced as in Mercury. Two large tail lights—9½ inches in diameter—set off the rear end, and stubby ridges, which can scarcely be termed fins, top a rounded upper section of the rear fenders which holds the back-up lights. Front fenders are flatter and broader with headlamps mounted horizontally in pairs in each fender. Grille is composed of a series of four pointed star-shaped units. Loading platforms in 1959 station wagons will be a full foot longer than in 1958. Ford lines will offer a lower-priced automatic transmission for economy models. New-type door handles will be used.

EDSEL will retain its readily identified vertical oval grille in front; the equally quickly recognized tail lights are kept in the rear. There will be relatively little change in this styling. The remainder of the front grille will be changed with the headlights mounted lower. Generally the purpose will be to add a freshness in styling without losing identity. Like the Ford line, Edsel station wagons will provide longer loading space and the glass area in station wagon bodies extends much higher into the roof line.

MERCURY sheet metal will be completely changed for 1959, giving the line a completely new appearance. The deeply scalloped upper edges of the rear fender will be dropped in favor of a more sculptured effect with no fins. The windshield will wrap over as well as around, resulting in a great increase in glass area. Headlights will be mounted in pairs horizontally and somewhat lower than last year. The car will look big, but sleeker than last year and the new styling imparts an appearance of greater overall lowness. It is not expected that there will be any material change in horsepower in either Mercury or Edsel.

LINCOLN AND CONTINENTAL will not be greatly changed from 1958. Lincoln grille, tail lights and interior will probably be changed to some extent and any changes made in the Continental would be aimed merely at further distinguishing it from the Lincoln lines. Simplicity of design has been the keynote in both of these lines and will continue.

ford

edsel

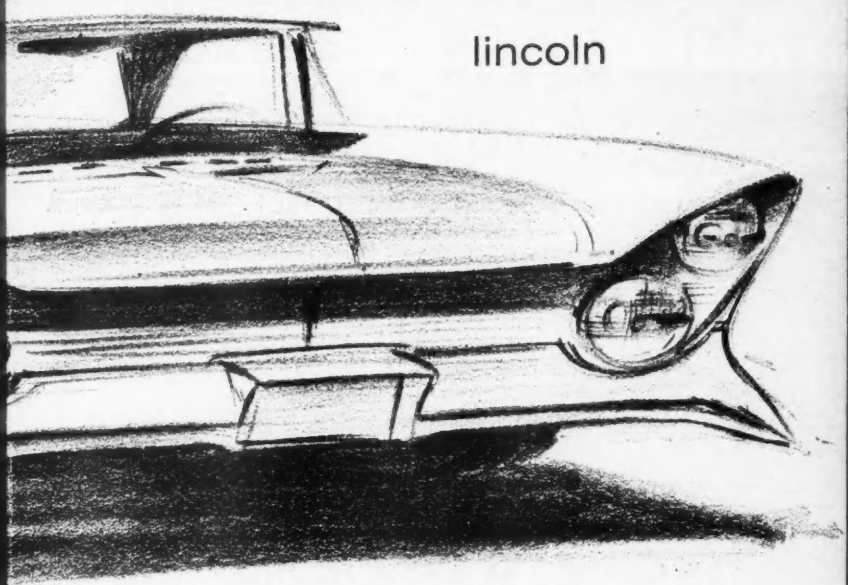
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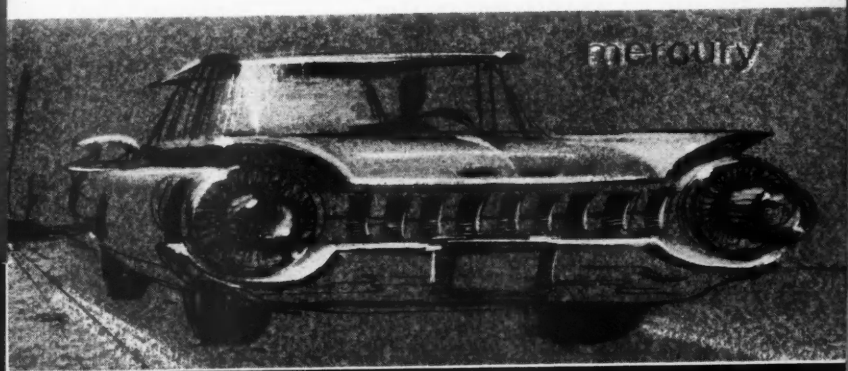
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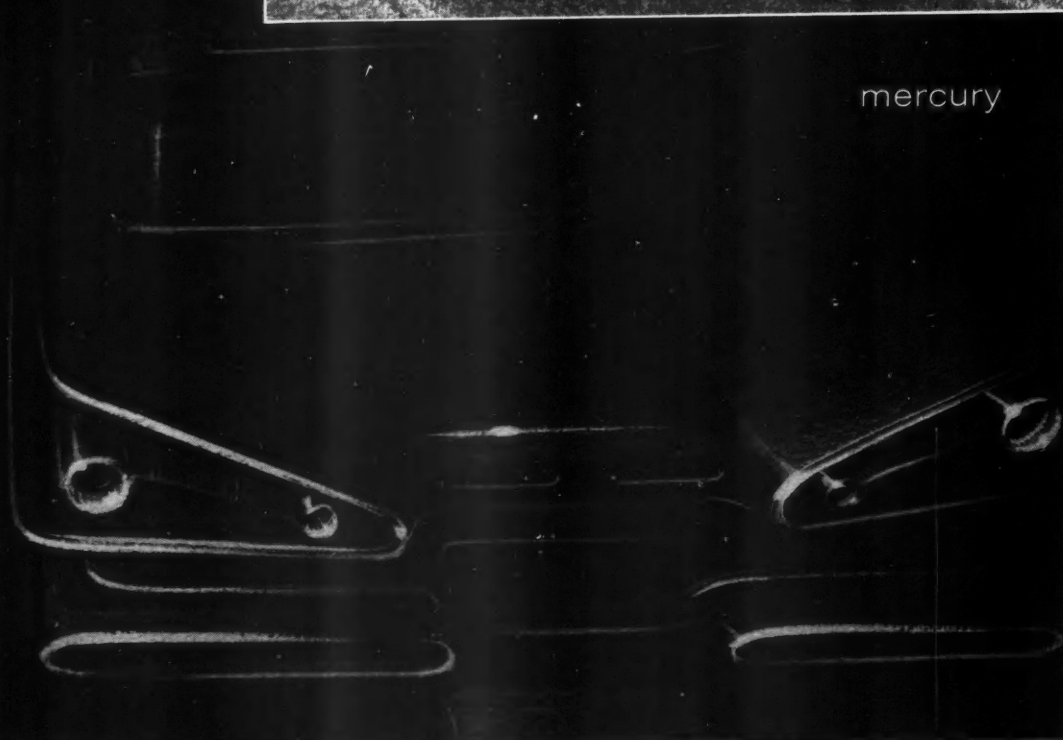


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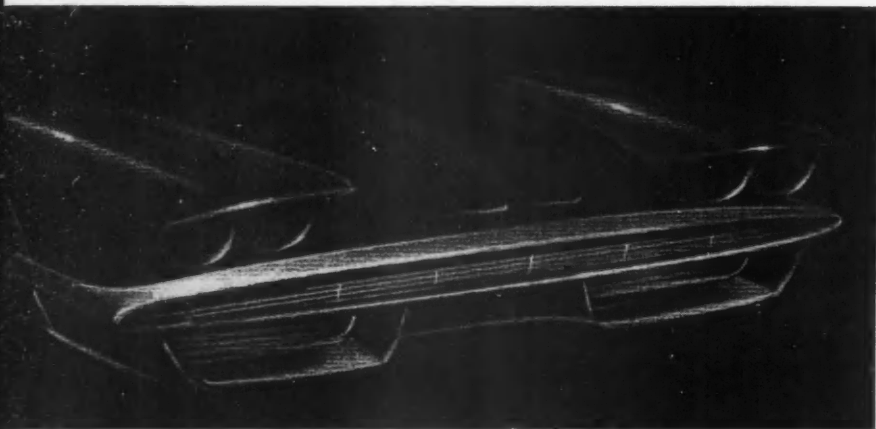


mercury

mercury



de soto



'59 CARS *continued*



plymouth



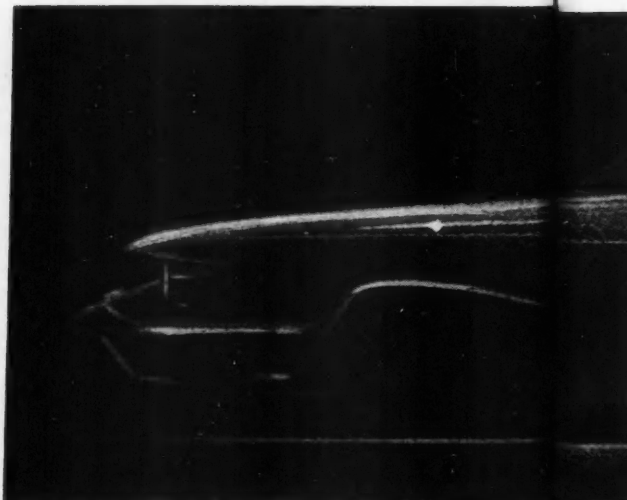
chrysler

THE CHRYSLER'S frontal appearance has been considerably changed, with hoods sloping more from the windshield to the grille. Front fenders are wider and rear fenders will have modified fins that are higher, particularly on the Imperial models. New engines will be offered for both Chrysler and Imperial lines. Windshield will be wrap-over type, providing much greater glass area; backlights will extend well up into the roof line, also with more wrap-around effect.

DESOTO will have a distinctive grille, new bumper designs and wrap-over windshields. Fins will be retained but restyled. Front fenders will be wider and the hood line will be somewhat modified with greater slope than in 1958. The design will retain its basic "Forward Look" with all changes aimed to make the car appear lower and longer.

PLYMOUTH'S front end has been equipped with a new and more attractive grille with narrow chrome bars forming horizontally oblong openings. Front fenders are wider and flatter on top. Hood line is higher in front than in previous models but retains the rounded lines basic to Chrysler styling. Rear fins extend further forward along the belt line and are gracefully curved from the rear quarter window to the rear of the fin rather than having the sharp kick-up used in 1958. Rear ends of the fins are more nearly vertical and the trailing edges are cut off vertically rather than sloped to the rear. Wrap-over windshields are used and the rear backlight extends well into the roof line. Glass area is greatly increased. The car will look much longer and lower than in 1958 and presents a really clean and exciting ensemble.

DODGE front fenders will sweep in toward the center of the grille and appear to blend in with the hood line, giving a broad front end appearance in which the top of the hood is level with the top of the fenders at the front. Rear fins will be slimmer and higher with the trailing edges a trifle sharper. Wrap-over windshield with rear backlight extending well up into the roof line will be used. Glass area both front and rear will be considerably increased. Aluminum-coated muffler and tail pipes will be offered on dual-pipe models.



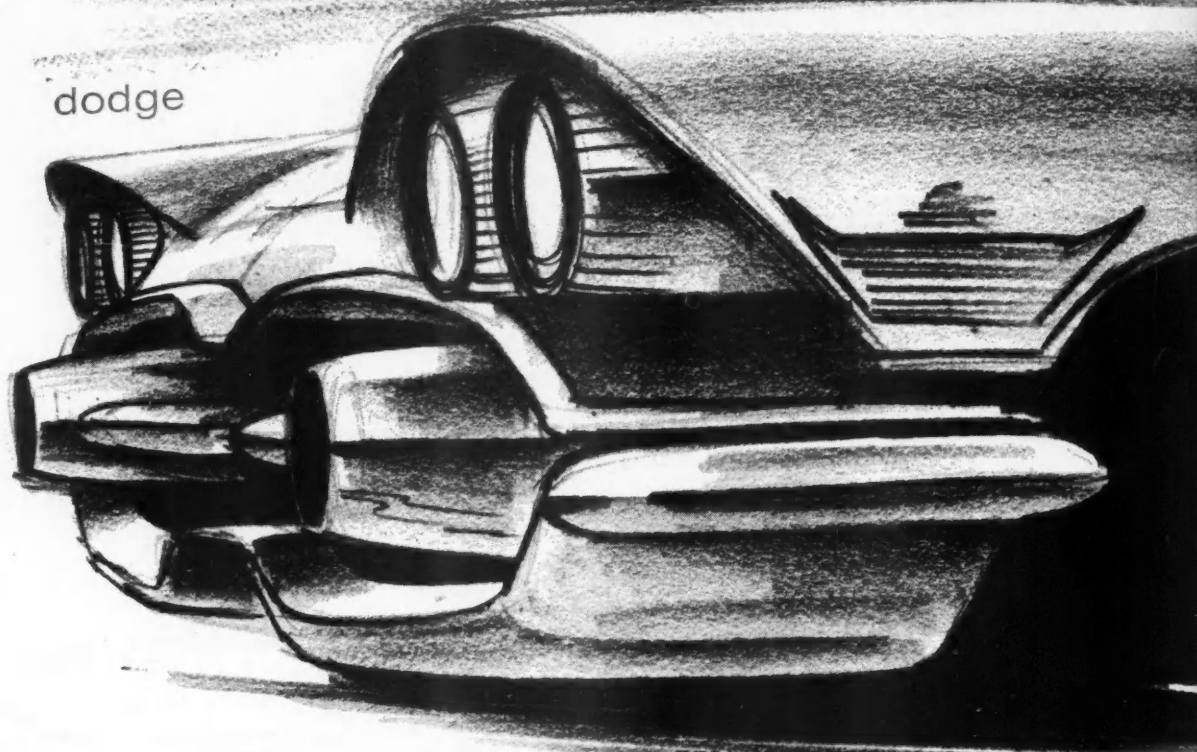
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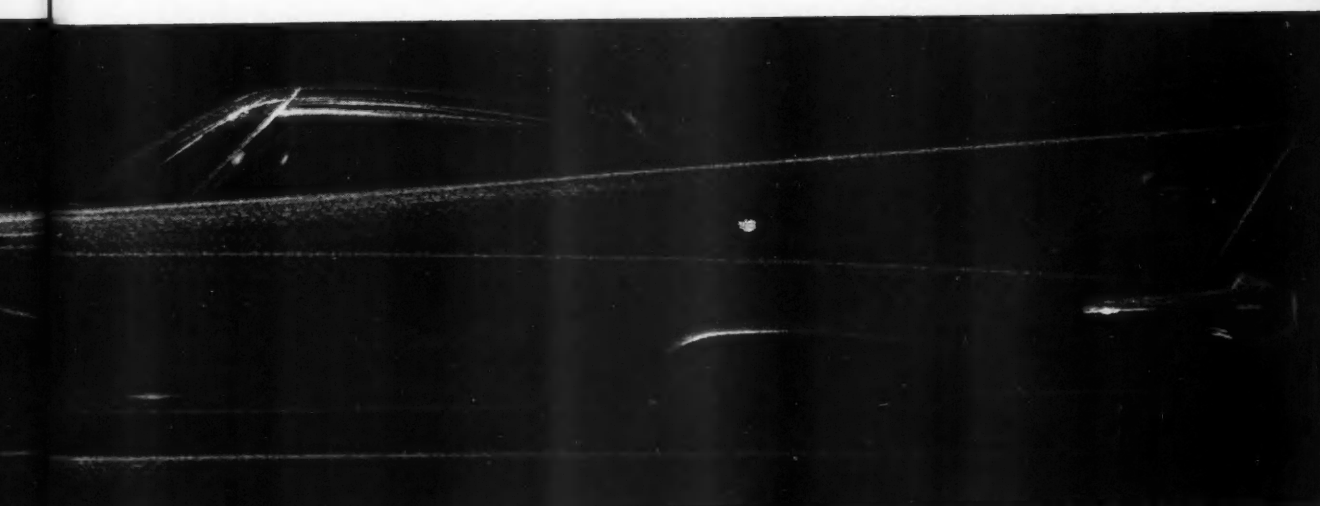
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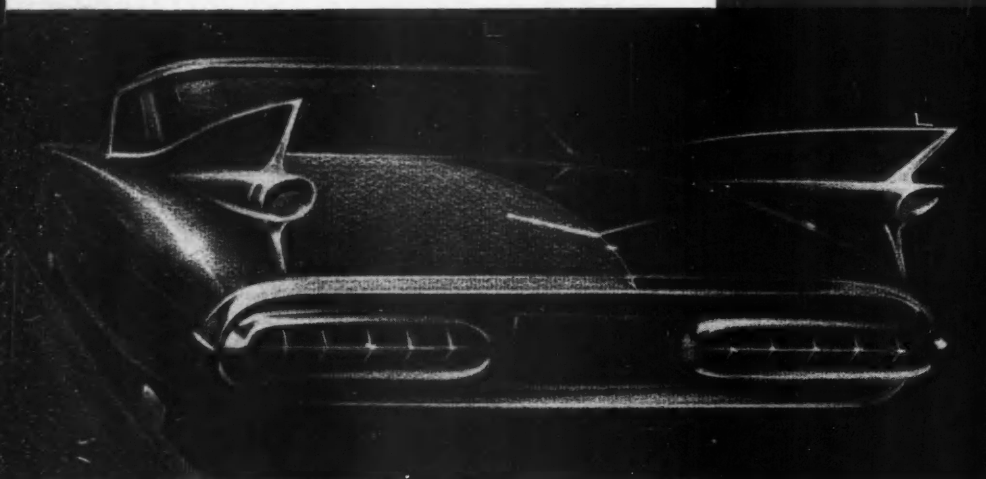


Chrysler

imperial



cadillac



General Motors

'59 CARS *continued*

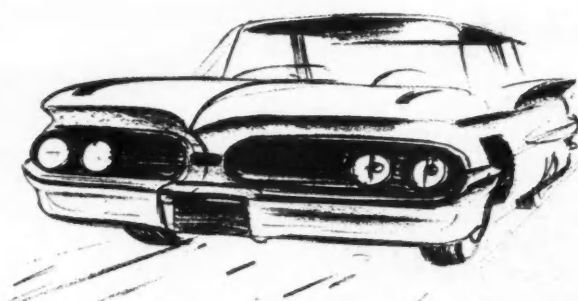
GENERAL MOTORS LINES will be restyled throughout and some lines will offer completely new basic bodies and sheet metal treatment.

CADILLAC will be given an entirely new look with longer, more sweeping fins that eliminate the kickup appearance. They will not be as high as last year but the whole appearance will be brisker. The front end will not be changed radically, but headlights will probably be mounted lower in line with the general trend in this direction. Engine and carburetion refinements will provide better performance and economy.

PONTIAC will be considerably lower for 1959 and will have wrap-over, wrap-around windshields and rear windows that extend into the roof line in common with other GM cars. The grille also has a less massive appearance with headlamps mounted somewhat lower than in 1958. The rear fenders will have a flatter appearance with nice-looking V-type fins which are almost horizontal front to rear. The car will be longer in appearance and will offer improved brakes. Engine and carburetion refinements will provide greater engine efficiency and economy.

BUICK has made a big change from the 1958 designs with body and fender trim completely redesigned. Rear fins will continue along the side of the car and form a sort of an outrigger appearance; in other words, the body at the belt line will be wider than the upper structure. Larger, round tail lights will set off the rear end. The front end treatment creates a feeling of litheness rather than sheer massiveness. Headlights will be mounted at an angle à la Lincoln. Windshields will be wrap-over, wrap-around type providing considerably more glass area. Overall height will be lower than 1958 and there is some report that 14-inch wheels may be substituted for present 15-inches. Aluminum brake drums will be available on all models and a new and larger engine will also be offered.

CHEVROLET has been completely restyled front and rear. The rear fenders form a shallow V and tail lights will be of an elongated reardrop design mounted horizontally. There will be two types of rear backlights—one a slightly curved type that extends well up



pontiac



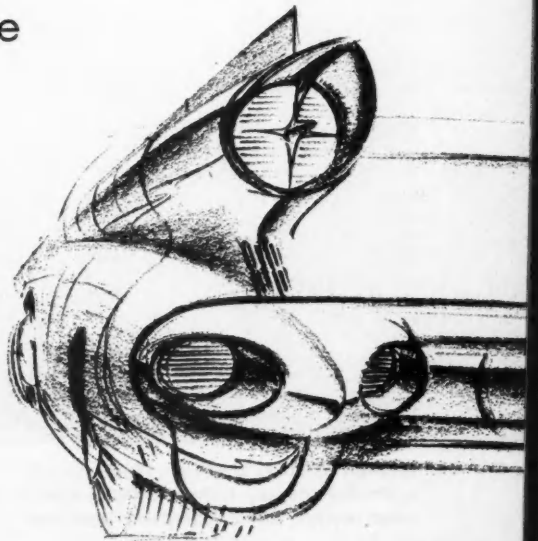
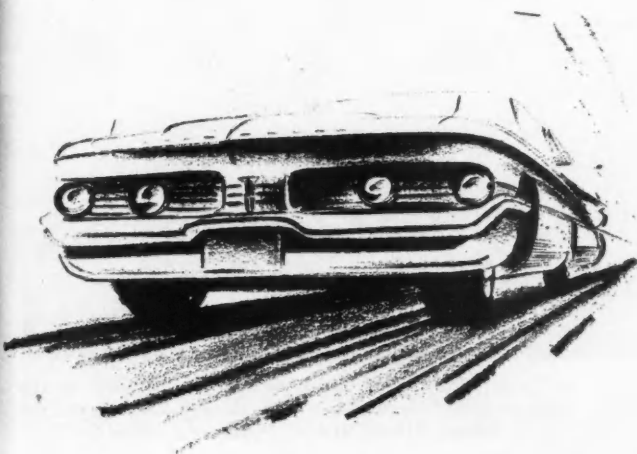


chevrolet

into the roof line; the other a panoramic type which sweeps around both rear quarters of the car giving unobstructed view to the rear and rear quarters. In this design the roof is almost flat while in the other a "fast-back" line is used. The front end treatment includes pairs of lights mounted just above the bumper on each side and just above them will be actual air scoops. The windshield wraps over and extends well into the roof line. Generally the car will look bigger, longer, and it is somewhat lower than the 1958 models.

OLDSMOBILE also will have the wrap-over windshield and rear window extending well up into the roof lines. Grille will be very nicely balanced to give an appearance of fleetness rather than mass. Headlights will be evenly spaced horizontally just above the bumper. Olds also is reported to have a new engine available that provides better economy. Chrome trim will be limited as compared with 1958. Rear fenders will have modified fins that are flat on top. The car will appear longer and will be somewhat lower than last year. /MT

oldsmobile



Imports Win Again at Monza

Competition at Monza gets hotter as Europeans forget boycott of 1957 and dominate starting field of the fastest race ever recorded

Photos by Gunther Molter

IMPORTS (American cars in Europe) were out in force for the 2nd Annual Monza 500-mile race, but did not dominate the field as in 1957 when the big names in European racing boycotted the event as "too dangerous."

Interest in this year's Italian classic was heightened by participation of factory teams with special equipment that outnumbered the Americans on the starting grid for the first heat.

Some of the specials for the "world's fastest race course" bore a striking resemblance to the Indianapolis cars (see pictures on opposite page). The Lister-Jaguar

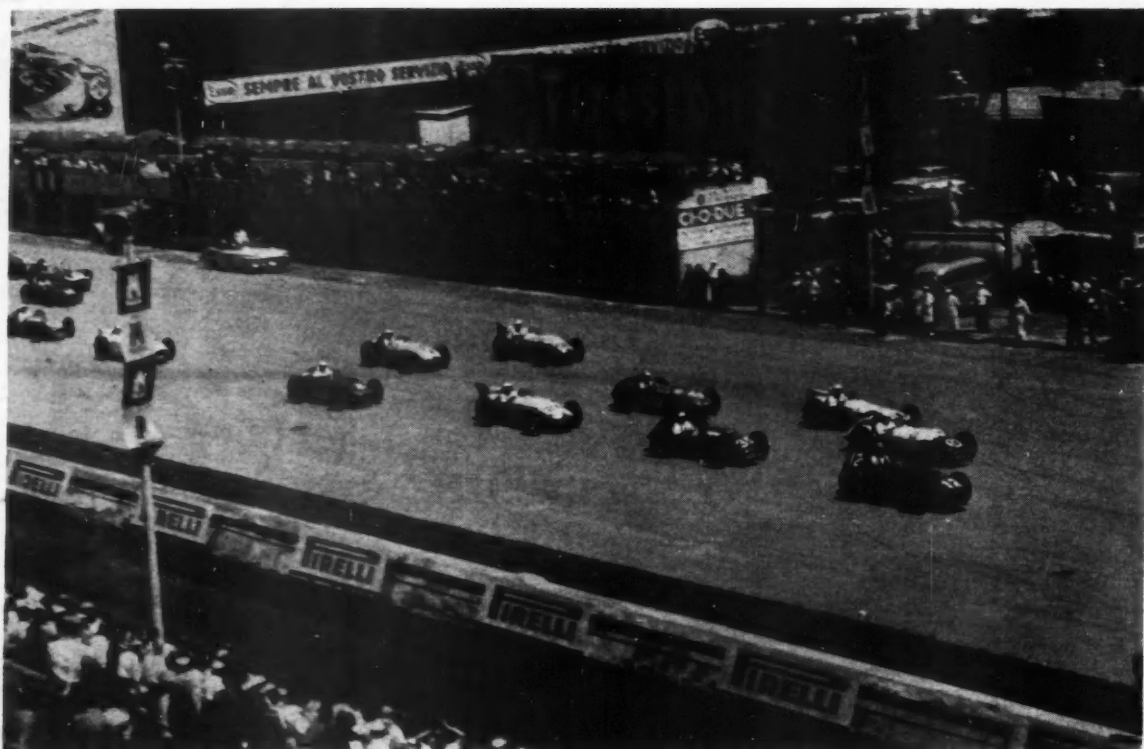
(2), driven by Jack Fairman, looked like the first "offset" roadster that the late Billy Vukovich drove to a near-win at Indy. Stirling Moss (10) had his hands full of 4.2-liter Maserati, complete with tail fin and the name of an ice cream sponsor boldly lettered half the length of his car. The late Luigi Musso (12), who finished third, alternating with American Phil Hill and British Mike Hawthorn in a 4.2 Ferrari, was second fastest qualifier at 174 mph.

The Americans, who stay low and in the groove at Indianapolis but ride the bank at Monza higher than anyone else,

were outclassed at the start of the first heat by Musso's use of his three-speed gearbox, enabling him to jump ahead of the Offys who started in high gear.

Jimmy Bryan (1), 1958 Indianapolis winner, cruised to second place with his huge frame stuffed comfortably in the Belond Special and a cigar clamped between his teeth.

Jim Rathmann (5), who overcame Musso's early lead by a second per lap, won all three of the 63-lap heats for an average speed of 166.73 mph, the fastest ever recorded for an auto race. →



MONZA START is similar to Indianapolis; the pace car, a Ford Fairlane, swings off the course and the cars roar away. The three-speed gearbox in Musso's car

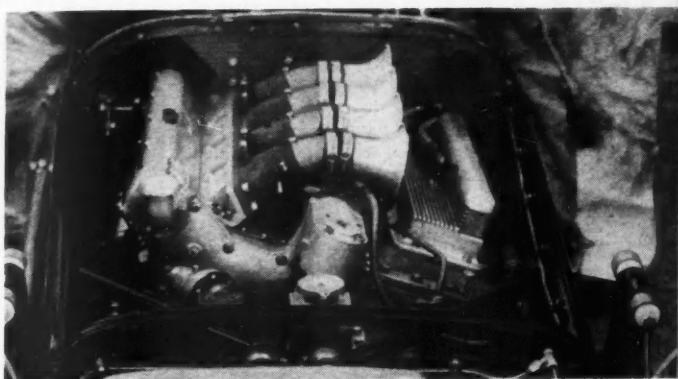
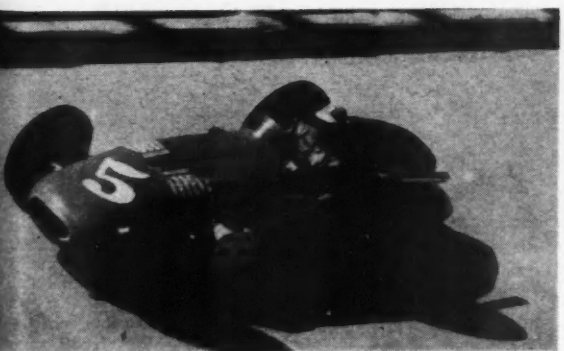
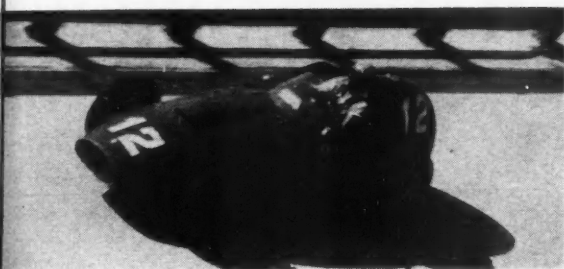
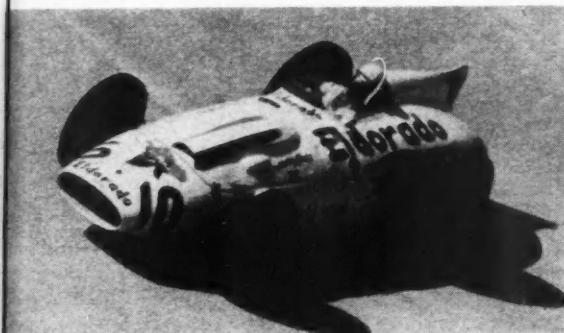
(12) enabled him to beat the rest of the pack to the first turn by 100 yards, a lead he maintained until exhaust fumes forced him to a pit stop after 26 laps.

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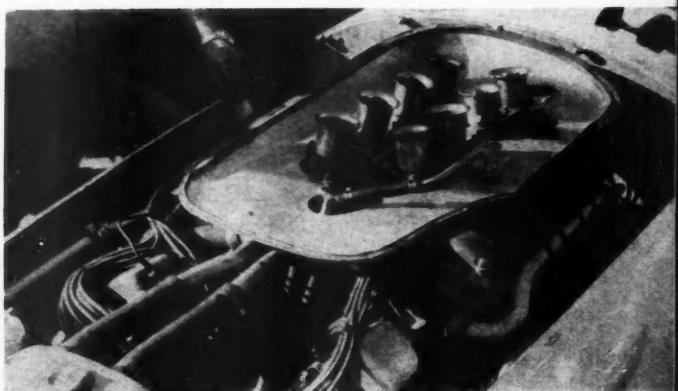
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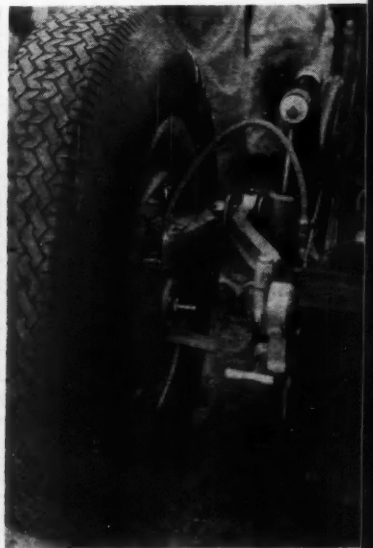
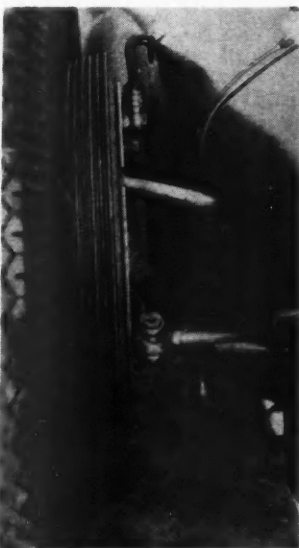
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OFFENHAUSER ENGINE was flat-mounted, gave Belond low center of gravity. Air tubes for injectors are curved.



WEBER CARBURETORS on 4.2-liter Maserati V8 had to be installed after fuel injection system failed to work.



INDEPENDENT SUSPENSION on Musso's 4.2-liter Ferrari had vulcanized rubber covering on the coil springs. The Belond (right) used solid front axle, torsion bars.

NO ONE CAN DENY that '58 Mercurys are big but they are the first big cars to have engines capable of handling them so well that they will please practically anyone. Engines in the two Mercs MOTOR TREND tested previously (June '58 issue) had standard four-throat carburetion. One was a 383-cubic-inch model, the other the larger 430-incher. After driving these cars I knew I would have to get my hands on one of the three-carburetor Super Marauders. If cars with standard engines performed as well as these two did, a car with a three-carburetor engine rated at 400 horsepower could be a real bomb.

Since a Super Marauder setup wasn't immediately available, it was decided to install locally a Super Marauder engine in the four-door Monterey used for the previous test. When the engine was changed, the 2.69 to 1 rear axle ratio, standard with the car's original 383-cubic-inch engine, was replaced with a 3.10 ratio. Cars with 430-inch engines are usually fitted with a 2.91 ratio but the 3.10 is an optional gear.

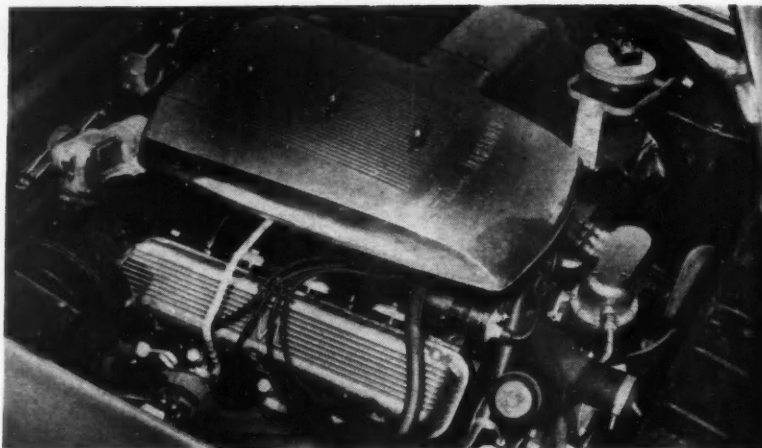
When I was given the Super Marauder I was also given the go-ahead to drive to Indianapolis and back. This would give me an excellent chance to become thoroughly familiar with the car and also to attend the 500-mile Memorial Day race.

My previous impressions of the push-button transmission control were verified on this trip. Pushbuttons—as far as I personally am concerned—must go, and that's all that can be said about them. Throughout the trip the engine started easily, hot or cold. Its idle was a little rougher than with a four-throat carburetor but this wasn't at all objectionable, nor did the rough idle affect driving characteristics.

DETONATION in all the new Ford engines—and our Super Marauder test car was no exception—is caused by too much spark advance. It can be eliminated by increasing the tension of the spring in the vacuum advance diaphragm on the distributor.

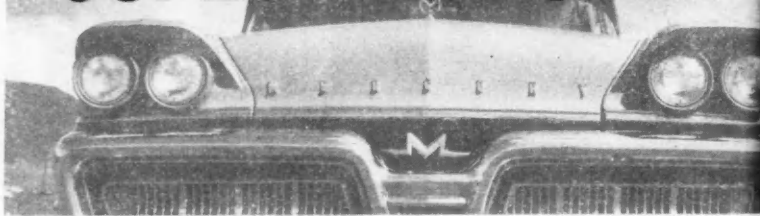
With Ford's new engines, such minor throttle movement is required for normal acceleration that manifold vacuum does not drop as much as in other engines. Therefore, by increasing diaphragm spring tension, the timing is retarded with a smaller drop in manifold vacuum. The theoretical purpose of advancing timing with a vacuum diaphragm is to improve fuel mileage; however, it is doubtful whether the adjustment required to eliminate detonation from this source would have any noticeable effect on fuel economy.

Super Marauder engines are exactly the same as other 430-inch Merc engines except for carburetion. Originally they were scheduled to have a different camshaft but this plan was dropped. Carburetion is supplied by three two-throat Holleys with

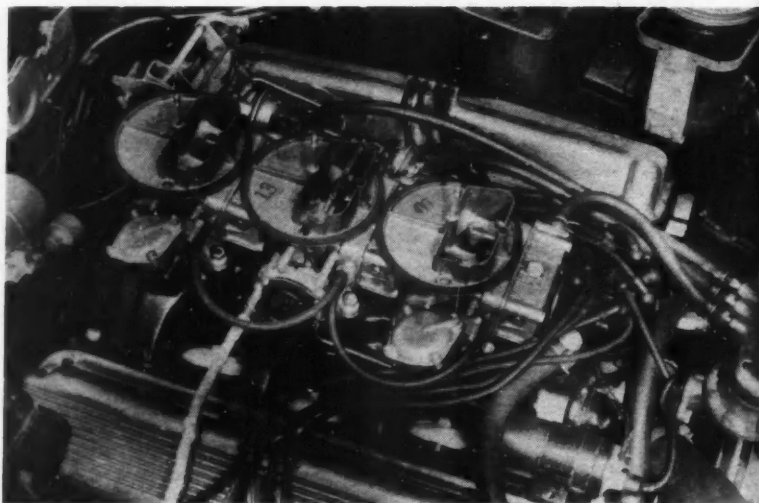


CADMIUM PLATED air cleaner houses highly efficient paper filters and has side duct that supplies cool outside air to three two-throat carburetors.

SUPER MARAUDER



by Don Francisco



CARBURETORS dominate the top of the engine but still leave plenty of room for manual linkage installation to eliminate vacuum control of throttles. Factory-installed chrome rocker covers are not included in modifying kit.

1 $\frac{3}{16}$ -inch venturis on a special aluminum intake manifold. Passages in the manifold are designed on the 180-degree, alternate impulse principle. A large polished aluminum air cleaner is secured to the carburetors with three chromed wing nuts. The cleaner is fitted with a paper-type filtering element and it has a single air inlet on its left side to which is connected the standard Mercury air inlet housing and valve assembly. When the engine is cold this valve directs warm air from around the left exhaust manifold into the cleaner housing and when the engine reaches its normal operating temperature the valve opens to direct cold air into the cleaner.

Fuel is supplied by a standard pump fitted with a special aluminum housing that supports a large-capacity filter and has individual outlets for each carburetor. The filter has a cadmium-plated steel hous-

amount to an automatic control of two-thirds of the engine's carburetion—to prevent their throttle valves from being opened at low speeds when the carburetors aren't needed.

Operation of the throttle linkage during the test followed the plan to the last decimal point but there was one thing about it that I didn't like. This was the lack of control of the closing speed of the throttle valves in the end carburetors. Under certain conditions the rapid closing of the valves had almost the same effect on the passengers as jumping on the brake pedal. This was most noticeable when passing other vehicles traveling at highway cruising speeds.

At normal cruising speeds the throttle valves in the end carburetors are closed but the car accelerates so quickly when the throttle pedal is depressed to pass an-

engine was developed so its demands could be anticipated. Control over the throttle closing would enable the car to be decelerated smoothly.

During the acceleration tests it was extremely difficult to get the car off the starting line without breaking its rear tires loose. Once spinning, they would stay loose unless pressure was eased off the throttle. This was with the transmission in Maximum Performance Range. In this range the car starts in low gear and then shifts to second and high. In Cruising Range the car would get off without wheel-spin because it started in second gear and with only a slight loss of speed at the end of the quarter-mile. Acceleration times for 0-45, 0-60, and the quarter-mile suffered less than anticipated when Cruising Range was used.

RESULTS OBTAINED on the Clayton chassis dynamometer at Performance Associates in Covina, Calif. were enlightening. The Super Marauder developed a maximum road horsepower of 195 at 4400 rpm, compared to a maximum of 173 at the same speed for the 430-cubic-inch in the Park Lane tested previously. Horsepower of the Super Marauder was higher than that of the Park Lane over the entire speed range. This would indicate that even at lower speeds, when only the middle carburetor is functioning, the three-carburetor setup is superior to a single four-throat. Another thing that must be taken into consideration is that engines of the same make and model can vary in their horsepower and torque outputs because of variations resulting from mass-production techniques.

Super Marauder engines are supposed to be available in Mercury Monterey, Montclair, Commuter, Voyager, Colony Park and Park Lane models. Cars ordered from the factory with Super Marauder engines are fitted with the chrome-plated rocker arm covers, which are pretty but don't make the car perform any better, and a beefed-up Multi-Matic automatic transmission. The Multi-Matic is the dual-range Merc-O-Matic and is, without doubt, the best automatic transmission that has ever been available in any car. Beefed-up transmissions for Super Marauders have a greater torque capacity than standard transmissions and are required for these engines.

All the parts needed to convert any 430-inch Merc or Lincoln engine to Super Marauder specifications are available in kit form from Lincoln and Mercury dealers. Chrome-plated rocker arm covers are not included in the kit, nor are there any parts for beefing-up the transmission. Dealers in the Los Angeles area are a little hazy about the list price of the kit so if a fellow were interested in buying one it might pay him to shop around. /MT

5200-mile cross-country

road test proves that

three carbs add more go

to Big M's 430-inch—

yet give better mileage

ACCELERATION		Cruising Range	Max. Perf. Range
From Standing Start			
0-45	5.8	5.1	
0-60	6.7	7.0	
Quarter-mile	16.3 and 17.5 mph	16.4 and 16.7 mph	
Passing Speeds			
30-40	—	2.8	
40-50	—	2.7	
50-60	—	2.3	
FUEL CONSUMPTION			
Stop and Go Driving	18.2 mpg for 340 miles		
Highway Driving	14.6 mpg for 407.5 miles		
Fuel Used: Mobilgas Special			

ing and a highly efficient paper filtering element. Large-diameter rubber fuel lines connect the carburetors to the outlets on the fuel pump housing.

Although the three carburetors are the same type and have the same venturi diameters, only the middle one has a choke valve, accelerator pump, and adjustable idle jets. The choke is automatically controlled. Each of the end carburetors supplies fuel for idling but the flow is fixed. Adjustments made to change idling characteristics are done on the middle carburetor only.

Throttle linkage follows the trend set by three-carburetor setups on General Motors cars: the throttle pedal controls only the throttle valves in the middle carburetor. All normal driving can be done with this carburetor alone. Throttle valves in the end carburetors are opened by vacuum diaphragms—one for each carburetor—that are actuated by vacuum created by the air flow velocity in the middle carburetor. This divorces the end carburetors completely from the driver's control, and when they open they open all the way.

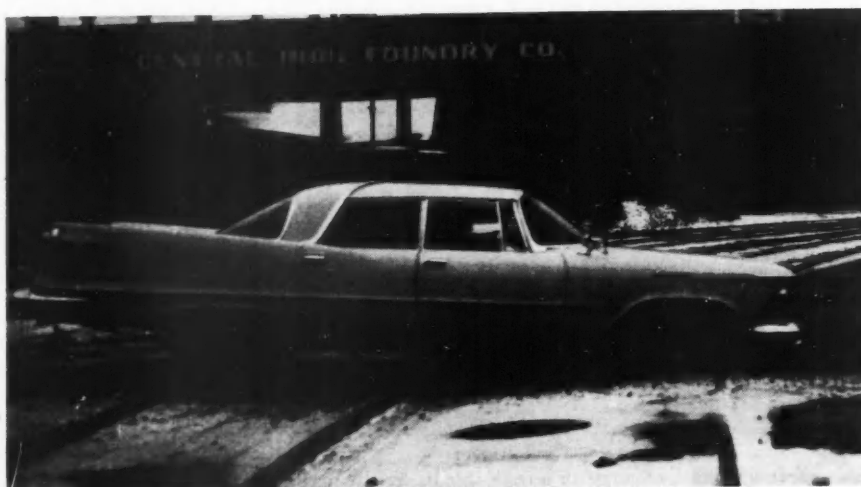
Vacuum-controlled throttle valves

other car or a truck that its speed quickly reaches the point where the end carburetors open. This doesn't cause any discomfort because all that happens when the throttles open is that the rate of acceleration increases. When the throttle is lifted slightly to allow the car to slow to normal speed again, the valves in the end carburetors snap closed, causing more deceleration than anticipated and throwing the passengers forward in their seats.

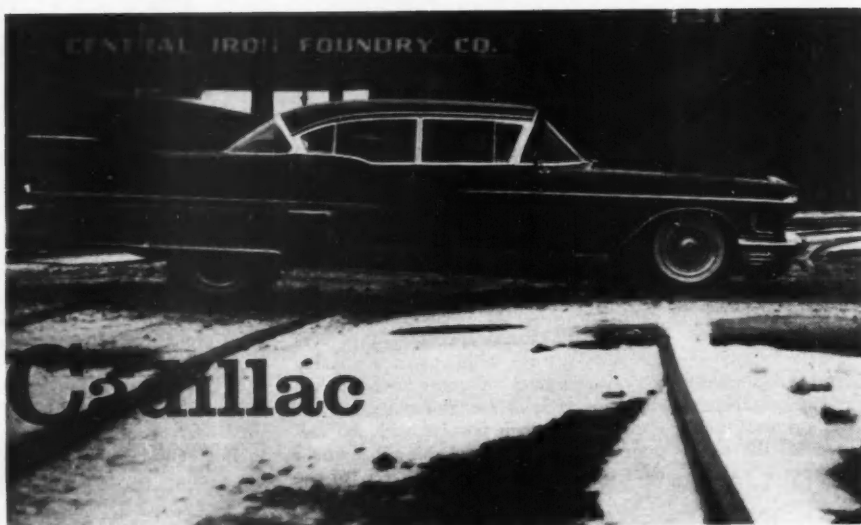
Actually this quick throttle closing condition is a minor detail in an otherwise highly satisfactory setup. But if I were fortunate enough to own a car with a Super Marauder engine, one of the first things I would do to it would be to install full-mechanical progressive throttle linkage on its carburetors. A driver could then open the end carburetors when he wanted them to be open and he could control their closing speeds. Control over the opening time might make it possible to improve rates of acceleration at low speeds by giving the engine more carburetion sooner than is possible with the vacuum control. This is something that would have to be practiced until a "feel" of the



Lincoln



Imperial



Cadillac

LUXURY AUTOMOBILES ON TRIAL

WHICH LUXURY AUTOMOBILE produced in America today is really the finest and best of all the prestige cars? To find out, MOTOR TREND has made a complete comparative road test of the three top family cars, all four-door hardtops. More expensive models are produced by the manufacturers of the Lincoln, Imperial, and Cadillac, but they are in the limousine or special class, hence do not generally come into consideration for ordinary family use.

Each of the three cars tested is competitive in price, with each manufacturer considering his particular model the most logical choice for the man on the way up. Which fine car should you buy? The choice must inevitably remain with the buyer, but here are a few conclusions drawn after living with each of these cars for more than a week and driving them at a time of year when the worst points of a car manifest themselves more quickly than do the good features.

If you want the widest car, you'll be surprised to learn your choice will be the Imperial. To own the longest, you'll have to make your deal on the Lincoln; it is also the lowest. The quickest away from the light, according to our test, is the Lincoln. The big Cadillac gets the blue ribbon for the best fuel consumption. For the softest ride, Cadillac takes the honors, but for handling and roadability, the Imperial can't be beat.

The brakes on these cars are not too good. The total contact brakes of the Imperial allowed but five slowdowns from 60 to 20 mph before fading (four each for Lincoln and Cadillac) and seven stops before braking effectiveness was totally gone (seven for Lincoln and six for Cadillac).

Steep driveways can cause trouble on all three cars with the long overhang on each the culprit; this can also cause parking problems, of course. The Imperial, especially, suffers from a combination of long front overhang and the lowest front angle of approach if dips or some railroad crossings are taken at critical speeds. As the photographs to the left prove, all dip with their nose to the ground over rough crossings.

For the most silent riding car, Cadillac is our choice, but as to wind noise on the open road, there's little choice. Most impressive car of the group is strictly up to you and the car's general reputation in the fine-car field.

What is wrong with these prestige cars? There are faults, many of them inexcusable in such costly machinery. For instance, the Lincoln did not make use of the principal virtue of unitized construction; the entire body possessed many rattles. Driving over rough road surfaces produced pronounced shaking of body panels. Fortunately, these vibrations were not communicated to the passengers, but the noise was objectionable. Doors fitted too tightly; the left rear door closed so tightly that the weatherstripping was mutilated and torn away. Windshield wipers had the poorest sweep and worked with difficulty. The Imperial indicated poor inspection, for the right rear door was incapable of being opened from the outside. The Cadillac had a creaking dashboard which made noises on every bump, and the right front door could not be locked electrically or manually.

Yet, even for these correctible criticisms, all three cars are worthy of being called America's finest automobiles. The one which satisfies the individual whims of the buyer is his best buy. They do differ, however, and you'll be better equipped to judge by reading the detailed test report of each car on the following pages.

continued

LINCOLN PREMIERE

ACCELERATION

From Standing Start
0-45 mph 6.2 0-60 mph 10.8

Passing Speeds
30-50 mph 4.3 45-60 mph 4.9
50-80 mph 11.4

FUEL CONSUMPTION

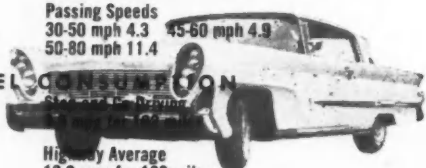
City and Hwy Driving
Highway Average
12.0 mpg for 186 miles

Overall Average
10.7 mpg for 348 miles

Fuel used: Mobilgas Special

BRAKING

Withstood 4 slowdowns from 60 mph to 20 mph before fading appeared



COMpletely new, the Lincoln is built in an equally new factory designed especially for the construction of unitized bodies. Thousands of separate welding operations fabricate a combined body and under-frame of great strength and rigidity. The entire unitized body, before final fitting and painting, is dipped in a tank where rust resisting primer flows over and into every nook and cranny.

We tested the Premiere Landau, Lincoln's finest four-door hardtop. It was fitted with a 375-hp engine, Turbo-Drive torque-converter automatic transmission, power steering, and vacuum-assisted power brakes, all of which are standard equipment and included in the base price. The test car also had a heater and defroster, a radio with an optional station changing floor-mounted step-switch, power windows, six-way power seat — all extra-cost accessories.

In the Lincoln, you step down when entering, unlike the other two luxury automobiles tested, making the low roof less of a hazard. Elderly persons especially will find the Lincoln rear seat the easiest entered of the three cars, largely due to the lowered floor. Instruments and controls are the best located of the three cars. The driver need never stretch as all controls for heater, fresh-air ventilation, radio, lights,

Lincoln

IMPERIAL CROWN

ACCELERATION

From Standing Start
0-45 mph 6.5 0-60 mph 11.9

Passing Speeds
30-50 mph 4.3 45-60 mph 4.9
50-80 mph 11.4

FUEL CONSUMPTION

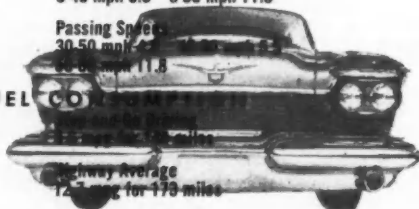
City and Hwy Driving
Highway Average
12.0 mpg for 178 miles

Overall Average
10.9 mpg for 317 miles

Fuel used: Mobilgas Special

BRAKING

Withstood 5 slowdowns from 60 mph to 20 mph before fading appeared



MT'S TEST IMPERIAL was the luxurious Crown Southampton four-door hardtop. Standard equipment included the TorqueFlite automatic three-speed transmission, power steering, and power brakes; the extra-cost accessories installed on the test car included the radio with floor station-switch, heater, air-conditioning system, six-way power seat, and power windows.

Since the floor was level, not recessed as in the Lincoln, we found ourselves ducking our heads slightly to avoid knocking against the top sill when entering the car. Rear seat entrance is made less difficult because of the unusually wide door opening.

Instruments and controls run a close second to the Lincoln with one exception — there's little logic in the clumsy placement of the turn signal switch at the bottom end of the vertically-arranged transmission pushbuttons. This requires one to remove the left hand from the steering wheel, glance quickly, and reach about nine inches down and to the left. Window controls are in the door panels, and the electric door-lock switch (optional) is positioned for easy left-hand operation. Instrument lighting is the best of the three cars — the black lighting does not glare, makes reading the large dials

Imperial

CADILLAC 60 FLEETWOOD

ACCELERATION

From Standing Start
0-45 mph 6.9 0-60 mph 12.6

Passing Speeds
30-50 mph 4.3 45-60 mph 4.9
50-80 mph 12.2

FUEL CONSUMPTION

City and Hwy Driving
Highway Average
11.9 mpg for 244 miles

Overall Average
11.0 mpg for 313 miles

Fuel used: Mobilgas Special

BRAKING

Withstood 4 slowdowns from 60 mph to 20 mph before fading appeared

Specifications of above cars on page 71



THE BIG, FLEETWOOD 60 SPECIAL was MT's test Cadillac. Available only as a four-door hardtop, this car has 3.5 inches more wheelbase and a scant two inches more overall length than the variety of models available in the more popular 62 series. The 60 has greater rear legroom than the smaller cars, but the same space in front. The test car was equipped with radio and heater, air-conditioning, a six-way power seat, power windows (including the vents), electric door locks, and air suspension. Its engine was the 310-hp unit equipped with the standard single four-barrel carburetor. An optional "Q" engine, a six-cylinder intake manifold mounting three two-barrels, raising the hp to 335, with the same rpm torque.

Entry and exit are on a par with the other large cars tested, but the front seat cushions are on the short side, giving less leg and thigh support than on the other cars. Power seat controls are in the driver's armrest, making adjustment easiest of the three cars. Floors are level with the door sill, making entry into the rear more difficult due to the downward sweep of the roofline at this point.

The electric door locking controls are impossibly positioned far back on the door sills, requiring difficult hand

Cadillac

etc. are neatly gathered into the bottom half of the instrument group which occupies a separate panel directly in front of the steering wheel. The instruments, while excellently placed, reflect badly in the upper left half of the windshield at night; however, only half this glare is the fault of the panel lighting—the real culprit is the prism-like transmission quadrant.

Driving position is excellent and the seats are deep enough to give genuinely comfortable support. In traffic, the steering is quickly responsive, although we found the test car cruised with better than one-half turn of free play in the steering wheel over the specified 3.3 turns lock-to-lock. One is amazed at the maneuverability of this huge car. We found that setting the transmission lever to "L" (low) would drop the speed gently to second gear without jerking; when the speed is dropped to about 20 mph, first gear comes in with greater engine braking, but very smoothly. The more you drive this big, heavy car you become aware that it does not ride as easily as you had expected. Although bumps are felt only slightly, you feel them more than in the other two cars tested. Roadability is almost superb—directional stability is the best I have ever experienced in any car, small or large.

easy, and there is almost no annoying reflection at night in the windshield.

The steering wheel, in our opinion, is the best of the three; the straight-across spoking allows a relaxing change of hand positions on a long trip. The power-seat controls are positioned handily at the bottom left of the seat; with the seat in the far aft position, there's a disturbing space of uncovered steel floor plainly visible beneath the front edge of the seat. Newly positioned left of center, the rear-view mirror does give improved view aft, if there is no-one sitting in the middle of the rear seat. This mirror, along with several others checked, failed to stay put after adjustment.

Driving position ranks, in my opinion, the best of the three cars tested. The depth of the seats from front edge to the backrest gives fine leg and thigh support. Armrests are comfortable; the front rests feature a hinged top surface which discloses a roomy space for maps and other small items like flashlights, fuel coupons, etc.

In driving, we often had the feeling, when catching sight of either fin in the corner of our eye, that another driver was too close. Fast 3.5-turn steering makes traffic maneuverability good; the lack of any free play in the steering made

Corners at speed are easy, the car's trailing arm rear suspension giving just the right amount of understeer. Although there is considerable lean on sharp or fast corners, this is not too apparent to drivers or passengers. Such heeling-over is less than that of the Cadillac, more than the Imperial.

Luggage space on the Lincoln is cavernous, the most usable capacity of any of the three cars tested. Once warmed up, the heating and defrosting system will run you out of the place. Especially good is Lincoln's method of piping heat to the rear passengers. The defrosters were the best of the three and covered the greatest expanse of windshield.

The Lincoln has a feel of luxury; its leather upholstery is carefully fitted over seats that were the softest of the three cars tested, and folding armrests in the centers of both front and rear seats add greatly to highway comfort. The rear center armrest, however, should have a pull tab of some sort to facilitate unfolding it from its very tight fit in the backrest. The rolls and pleats of the upholstery have a custom look and feel, and the carpeting is thick and soft. Separate lamps at each extreme end of the dash light, with the dome light, when either door is opened, giving this car the best interior lighting of the three. /MT

this car the quickest to respond of the three. The Imperial, with its torsion-air suspension system, handles like a well-trained quarter horse on all road surfaces. On the test car were the optional 11.00 x 14 tires which give a softer ride. Unfortunately, however, these fatter tires, though they increase traction, do not help roadability. On the contrary, they sometimes cause a slight rear-end sway on quick turns. Power steering is quick and responsive; there is slight understeer, just enough to facilitate high-speed travel in greater safety. Cornering lean is slight, less than the other two cars. We noticed a hint of road wander, brought on most likely by the large tires.

Heating and ventilation are good, but defrosting is the least effective of the three cars tested. Heat, however, comes within three minutes after a cold start.

The feel of luxury in the Imperial is emphasized by the metallic-threaded nylon upholstery; it looks and feels rich. Warmer than the leather in the Lincoln in cold weather, this upholstery is matched by the finest looking door paneling, the best formed and most comfortably located center armrests. Chromeplating on the instrument panel has a better look of quality than on the other two cars. /MT

maneuvering. The outside rear-view mirror is controlled by a handle from the inside. The parking brake gave trouble on freezing mornings; the release trip is on the left of the pedal and sometimes release is not positive. Instruments are surrounded by too much chrome; at night, unless the panel light is dimmed well, reflections in the windshield are bothersome. Foot pedals for throttle and power brakes are close enough for simple foot pivoting.

Since the Cadillac had air suspension, we used the height control lever to raise the car to climb a curb when it was pinned into a parking slot by a double-parked car. It takes two or three minutes to raise the car; the tail end rises first, followed more slowly by the front end. Road clearance can be increased by more than four inches for emergencies.

The steering wheel has two spokes with nearly the shape of a knife edge, not making them a safe resting place for the driver's chest in case of an accident. As in the Lincoln, we favored the automatic transmission control lever over the dash-mounted pushbuttons that are on the Imperial; you do not have to remove either hand from the wheel to operate this or the turn signal switch.

Driving position is good, although the driver is the least

comfortable of the three because of the short seat design. Front armrests on the doors are not positioned for best comfort; a recess for pulling the doors closed is located exactly where the elbow rests. The transmission selector indicator is centered immediately below the horizontal speedometer face, best for viewing of the three. In traffic, only disturbing factor is the slow steering which requires considerable winding, nor does the steering wheel effectively center itself after a sharp turn as on the other two cars tested. Downshifts for safer braking are smooth. Visibility to the rear is best from behind the wheel of the Cadillac.

On trips, the air suspension gives a beautiful ride, but road bumps, dips and paving strips are still felt. The Cad has greater lean on corners than the other two; nose diving on an emergency stop is greater, also. Road feel through the steering wheel is less, however.

Heat circulation is good; there were no leaks around doors or windows, and defrosting of the windshield was excellent.

As to the feel of luxury, the test car had beautiful nylon upholstery in a dull gray tone to lend subtle charm to the interior. Rear passengers now have manually-operated vent panes in the windows. /MT

A black and white photograph of a man in a suit, seen from the side, holding a large, unrolled blueprint. He is standing in front of a car engine, which is partially visible in the background. The scene is dimly lit, with the man and the blueprint being the primary light sources.

DETROIT'S NEWEST

For '59 it won't be a gas turbine, or an aluminum engine, but a huge V8 that for the first time in many years couples economy with performance

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Engine

by William Carroll

TODAY FINDS DETROIT building an unusual engine. Huge by any yardstick, it's over 400 cubic inches in displacement and gives 325 horsepower, with every dimension the start of an engineered approach to giving car owners what they have wanted for a long, long, time: Economy AND performance.

Almost 19 miles to the gallon at steady 40 mph is the boast of this 4700-pound car carrying four people. And it can get from 0 to 60 in a little over 10 seconds!

No trick with mirrors, this new engine for one of 1959's most-changed cars was ordered more than two years ago when management figured the horsepower race was running its course. Shoppers had begun pestering the dealer for transportation they could afford to drive, plus enough performance to keep out of trouble.

The Chief Engineer had his company's '58 block evaluated for improvement potential. It was found to need only minor internal strengthening and a change in location of the crankshaft thrust bearing. Pistons were enlarged, stroke and con rods lengthened to increase cubic inches, while stresses resulting from the increased power output were absorbed by a redesigned crankshaft in deeper main bearing caps.

THEN SOMEONE DISCOVERED the camshaft. Engine dynamometers began operating on an overtime schedule as cam after cam was tried in the larger block. Every possible design that would provide both economy and performance was tested. Months later the results were tabulated. The winner? A 1958 cam with minor changes to exhaust and intake lobes—using configuration that *reduced* overlap by 82 degrees.

Exhaust gases then came in for dynamometer attention, with final tests of a system reported to be vastly more helpful than the usual header arrangement. Novel manifolds, referred to as the double "Y" type, provide for a separation of 270 crankshaft degrees between exhaust cycles of cylinders exhausting into any one manifold branch, thus virtually eliminating overlap within a given manifold. No longer would exhaust pulses interfere with each other to cause power losses or uneven running.

Total results were impressive. The new cam, plus 37 cubic inches and larger exhaust valves, added 25 horsepower. Most important, the same combination added a useful 45 pounds-feet of torque along every inch of the power curve all the way up to the point of peak torque output—which is now 400 rpm lower than the point of peak torque for a similar 1958 engine. In effect, engineers put power into the low speed range where most of us use it, rather than frosting horsepower on top for exclusive use by the factory advertising department.

What else happened?

One engineer spent a solid month on the flow-meter.

Carburetors? No, on intake manifolds. Working with soft clay and plaster models of various galley forms he spent day after day designing and re-designing interior passageways. In the end, he made considerable improvement in low rpm efficiency with minor changes of interior shape plus a 10 per cent increase of manifold branch internal dimensions. Now the new engine would efficiently distribute fuel at moderate speeds where most cars are driven.

In the same laboratory another engineer worked with carburetors. He altered throat sizes of the '58 four-barrel slightly, added a restriction to improve airflow, reduced jet sizes to a minimum, and educated the power valve for two-stage operation. Finally when he established manufacturing specifications for 1959 production carburetors, all tolerances were put on the lean end so it would be difficult for the factory to clobber his economy calibrations by careless inspection.

A real shocker to any mechanic who will tune this '59 engine for the first time is a factory specified basic ignition setting of 12 degrees BTDC, whereas most '58s are set four to six degrees BTDC. We asked an ignition engineer why. The reply: "Our men found the engine idles cooler at this advance figure and because it idles cooler, the fan diameter has been reduced by an inch and a half. This cuts fan noise and gives a minor horsepower gain because the engine doesn't have to use so much power whirling big blades."

WHAT WILL IT DO ON THE ROAD? Gas mileage we've discussed—nearly two miles to the gallon better than a similar package in 1958. Performance tests found time about two seconds longer to hop from 0 to 60 with the '59 than it did with a '58. Here's why. The '58 had a 3.23 to 1 (performance) axle ratio with a different body, some 500 pounds under the '59 we drove. Not only did the '59 weigh more, but it toted three passengers over a 2.78 to 1 (economy) rear axle ratio! Or to put it another way—the new engine was carrying a bigger load and turning about 15 per cent slower at the 60 mark, which it turned in slightly over 10 seconds.

And here is where the string is tied. For the first time since the war, Detroit is building engines, transmissions and axles to operate as a team. This big new engine, with its area of maximum torque at low speeds, provides good performance with an economy axle ratio that chops engine rpms a good many hundred revolutions each mile. This is the package you'll find under one of the most surprising 1959 cars. The car that had them worried the most will soon start for the top of the heap by announcing an engine that begins an entirely new approach to automotive economy.

We've road tested this car in Detroit for **MOTOR TREND** and will bring you the whole story of "Detroit's Most Changed Car" in next month's issue.

/MT

UNKNOWN WINS GP

"Newcomer-driver Lautenschlager was in a cold fury—he had to out-drive, out-smart or out-bluff just one more car to win the 1908 French Grand Prix—and his little dream house."

by Gordon Wilkins

UP TO 1914 IT WAS THE AMBITION of every racing driver to win the Grand Prix. It is now called the French Grand Prix to distinguish it from other great national events which came later, but since motoring began the French had set the pace in motor racing and their race was the great event of the year.

From 1895 to 1903 there had been the great series of inter-city races starting from Paris and going to places like Rouen, Dieppe, Bordeaux and Ostend. As cars became faster and more powerful the range was extended; there was the Paris-Berlin and then the Paris-Vienna, until the tragic Paris-Madrid of 1903 brought the series to an end. For the next two years the last two races of the Gordon Bennett series were the focus of international interest. France won them both and in 1906 started a new type of event with the Grand Prix run over a circuit northwest of Le Mans, which was 64 miles long, with one straight of 21 miles. In 1907 the event was held on a triangular 48-mile circuit based on Dieppe and for 1908 the same circuit was chosen again.

The rules for that year set designers a new problem, and manufacturers from all the leading car-producing nations took up the challenge. In order to check rising speeds, minimum weight was fixed at 2425 pounds and piston area was limited. Four-cylinder engines must not have bores greater than 6.10 inches, and for six-cylinder units the limit was 4.99 inches. Designers had to seek greater power by using longer strokes, higher revolutions, and detail improvements to give better gas flow.

The entry of 49 cars was a record for the closed-circuit events. France, as befitted the thriving state of her automobile industry, had the biggest contingent, with teams of three cars from Clement Bayard, Richard Brasier, De Dietrich, Mors, Motobloc, Panhard, Porthos and Renault. From Germany, Mercedes, Benz and Opel sent three cars each. England had entered three six-cylinder Austins and three London-built Weigels. Italy had teams of Fiats and Italas. From the U.S. came a lone Thomas driven by Strang.

The drivers were the best of the contemporary talent—veterans, rising stars and a sprinkling of newcomers: colorful Camille Jenatzy, the "Red Devil" who won the 1903 Gordon Bennett; Charles Jarrott, the Englishman who won the Circuit of the Ardennes in 1902; and George Heath who won it in 1904; Henry Fournier who won the Paris-Berlin and the Paris-Bordeaux was driving on the Mors team with Gabriel who was awarded the unfinished Paris-Madrid after an epic run as far as Bordeaux. Henry Farman, one of the two famous racing sons of a British journalist residing in Paris was there; Vincenzo Lancia was driving a Fiat and so was Felice Nazzaro who had won the 1907 event at Dieppe. Renault was expecting great things from the Hungarian Sziz, who had won the 1906 Le Mans event for them. Richard Brasier had high hopes for Leon Thery, a driver so regular that he was nicknamed "The Chronometer" and who had won both the 1904 and 1905 Gordon Bennett events and the French eliminating

continued on page 66

Blocked by the car ahead, Lautenschlager had his mechanic fiercely brandish a large hammer. The threat was effective.

Illustrated by Carlo Dema

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"I Drove Tomp



Tomorrow's Cars!"

by William Carroll

WOULD YOU LIKE to slip a notchless key into a slot and wait only seconds while the car's roof silently opens and doors unlock automatically? Then you'd step down, drop into a form-fitting bucket seat and punch the starter button. While an electric starter brings the gasifier speed up to 4000 rpm, you touch another button, closing both roof and door. The gasifier is now idling at 15,000 rpm. You release a hand brake, touch the throttle and relax in a car designed to exceed 200 mph.

Or would you prefer a more conventional car? It's just like a 1958 sedan, with brakes and throttle where you expect to find them, but it has no steering wheel! You start the car just like any other, rest your arms on a padded safety shelf but instead of reaching for a beer, reach for the steering lever. Tilt it to the right — the car turns right. Tilt left and the car turns left. Swing it and the sedan will romp back and forth faster than you could possibly turn a steering wheel.

Still not happy with tomorrow's cars?

Then take a trip in one of the world's most aerodynamic passenger cars. It's on a 129-inch wheelbase, has full-wrap rubber-mounted bumpers protecting the body on all sides, a husky V8 with 12.5 to 1 compression ratio and a hard top that slides back to disappear into the rear deck.

Mockups?

Clay models?

Not on your life. Every one of these cars exists today, has been driven on public highways and been practically beaten to death on Detroit proving grounds. This we know: A few short weeks ago we drove Chrysler's Dart, one of the world's most streamlined passenger cars. We threaded traffic at Ford's Dearborn Proving Ground in their stick-controlled sedan. And we throttled the power surge of a previously restricted turbine-powered unit at GM's Technical Research Center.

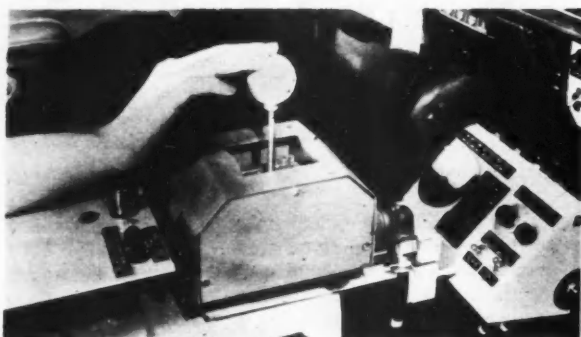
GM'S FIREBIRD II More than any other car, GM's experimental Firebird II is an artist's conception of "Tomorrow's Car." This gas turbine projectile has many well-publicized features ranging from a beverage bar in the passenger compartment to electronic guidance which almost eliminates the driver.

Once you're in the four-passenger two-door car and have closed a side

Firebird II



INSTRUMENT PANEL of Firebird II looks like that of an airplane, with its maze of dials and switches necessary to control the car.



GM AND FORD TILLER CONTROLS

which makes like a door, you unlock the electrical system and touch the starter button. While the starter winds the gasifier up to 4000 rpm (when the fuel turns on automatically), you can lever a switch to close and lock the top. By the time it is latched, idle speed of 15,000 rpm has been reached and the turbine is ready to go. Now you move the transmission selector to DRIVE, touch the accelerator, and as the high-pitched whine pleasantly increases in pitch, suddenly discover you're in motion.

It has a strange sort of power — so smooth it won't slam you into the seat, but potent enough to send you scooting over the pavement at speeds over 100 mph. There's no engine compression to ride against for cornering or slowing down. But, touch the mammoth brake plate and tie onto aluminum drums mounted outside the wheels for cooling, and you slow or stop under complete control, minus vagaries of engine speed.

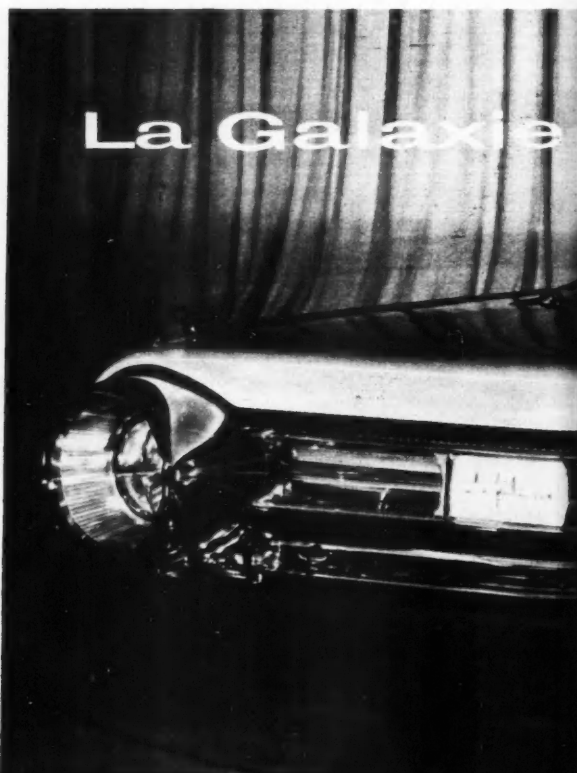
GM'S TILLER CAR At the GM Technical Research Center we tried GM's highly refined and roadable tiller car, a car that could be driven across the United States without strain. Known as Unicontrol, their tiller job uses a billiard ball (GM calls it a "weighted knob") on top of a four-inch shaft. Pushing the ball forward opens the throttle. Pulling it back applies the brakes. Tilt it to the right and the car turns right, or left if you tilt left. In the experimental car we drove, the foot brake was there for emergency use and the tiller had an over-ride so the passenger could assume control if an inexperienced driver should manage the wrong tilt or tiller.

Neither ball nor tiller has direct connection to any power unit. Instead, potentiometers control steering, brakes or throttle through interconnected wiring. Best of all, GM's tiller car has built-in variable steering ratios. When parking the car, or driving at low speed, only small motions of the stick are needed to flip in and out of a slot with the greatest of ease. As car speed increases, the steering ratio gradually changes so that at high speed the full four inches of stick movement can swing the car on dry roads without skidding. The stick is spring-centered, requires only one pound of pressure to move and is dampened to prevent oscillation or wobble. We could bat the ball back and forth, which swung the car from side to side, and each time the ball would return to dead center and keep us heading straight down the road.

Another interesting feature of Unicontrol system is its "feedback" to the driver. For instance: If the car were to skid, inertia of the ball provides an indication of the proper way to correct the car's course. The driver can feel a force against his fingers that "tells" him to correct his direction and pull the car out of a skid or swerve. In short, Unicontrol seemed great for trucks or drivers who seldom get in trouble.

FORD'S LA GALAXIE At Ford we had a chance to closely inspect La Galaxie, a non-operable but most interesting dream car that seems to represent concrete evidence of many engineering features planned for the future. It's built of Fiberglass on a 1956 Lincoln chassis. We were told that nothing operates, but each of the car's many features seems completely practical. Chrome is confined to front and rear bumpers, and to an area around the front wheels. Between the two-section split-level radiator are horizontal tube-like lights for city driving. High intensity spotlights mounted in each fender are for highway travel.

Body-wise the car is loaded with unique ideas. Ford used roof panels which flip upward as either of the two doors is opened. Glass is installed solidly flush with sheet metal to reduce noise, and add to usable interior space, and to make it possible to air-condition the car for little additional cost. Rear seating of La Galaxie is molded foam, fitting the entire



rear section with seats for three people. Three individual front seats (adjustable) are of foam in the new thin-section cushions and backs which equal the comfort of those in current production, but take up far less space in the car.

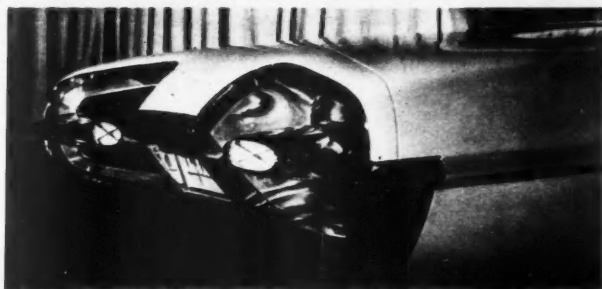
How they expect to propel La Galaxie was never discussed, but completely flat floors call for front-wheel drive with front engine, a rear transmission-differential with rear engine mounting, or an entirely new method of power transmission, such as a turbine job indicated by the front fender exhaust vents. Supporting this opinion is the transmission selector which has only "N-D-R," the only gears needed when a power source (gasifier) is in front and motive force (turbine) in the rear.

Instruments and controls are both weird and wonderfully practical: there's a proximity warning device which hits the brakes if you are too close to something, transmission selectors in the center of the steering wheel, horn buttons and turn signal buttons on top of the wheel rim, good size control buttons for door, seat, headrest, deck lid and wiper blade. On the floor are two huge flat plates. The left is a brake, the right is a throttle. Apparently we'll soon be driving with both feet, as clutches become a memory of the distant past.

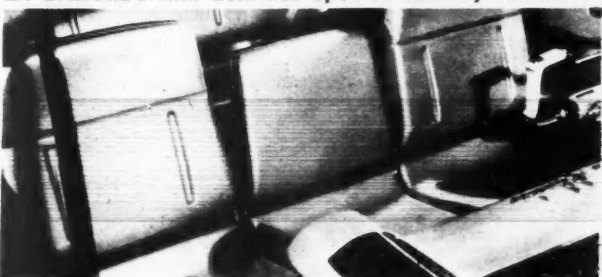
FORD'S TILLER CAR From the sublime to a drivable "car of the future" was a matter of 10 minutes to Ford's Engineering Laboratory, where we met Leonard Jensen, Supervisor of Human Engineering. Jensen figures out if people are happy with the oddball gadgets from an engineer's dream world. His current project is Ford's "joy-stick" car which is steered by a tiller so sensitive it may be operated by thumb and forefinger.

It was an odd feeling to sit behind the wheel of a car that has no wheel. A couple of well-padded cushions hung from the dash and were locked in front of our chests to act as safety belts should I tilt or tiller the wrong way. Brake and throttle pedals were in the right place, but the transmission

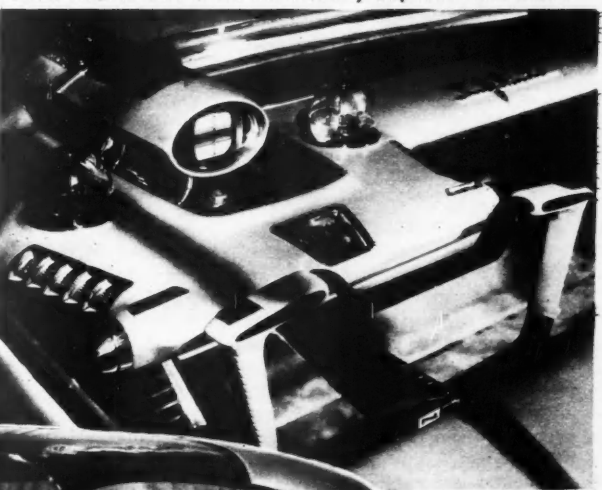
INSTRUMENT PANEL has controls for seats, doors, deck lids, headrests, hi-fi tape and warning devices.



LA GALAXIE'S twin deck lids open in butterfly fashion.



THREE FRONT SEATS are individually adjusted from dash.



FORD DREAM CAR has glass flush with sheet metal to reduce noise. Roof panels flip up as doors are opened.

"I DROVE TOMORROW'S CARS" continued

selector was cut down to a stubby lever sticking out of the dash where a steering column should be.

With the engine running we rested a right arm on the upholstered shelf and grabbed for the tiller while gingerly applying a little throttle. Everything under control, we idled along at 15 mph to get the feel of driving with a stick. Tilt the tiller, a servo control works the power steering, and the wheels turn. With its two-to-one ratio the tiller was much too rapid for anything but slow driving at 30 mph or under. We could swing around the sharpest curves with great ease, but on straightaways it became a headache of continual attention and control to keep the sedan in a straight line. There was no relaxing, as most of us can do with a wheeled power-steering setup. Later, Ford engineers told us the unit was not designed for road work, but was built to determine if and how a tiller control would operate in a car.



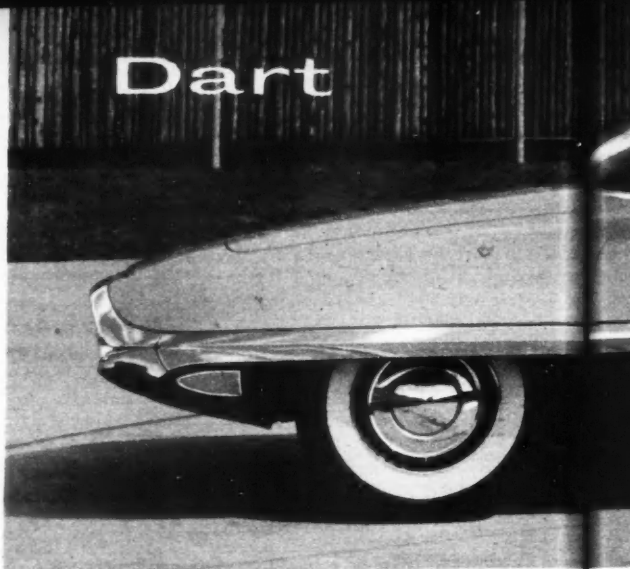
SEATS offer adequate room in front, restricted in the rear.

CHRYSLER'S DART At Chrysler, the first question we asked of Virgil Exner, Vice President in Charge of Styling, was, "Does the Dart represent current thinking at Chrysler?" Exner replied, "The Dart [shape] theme is part of our basic philosophy. In our opinion this is what an automobile should look like. It's a contemporary car with a feeling of motion. And we use the same approach to interior design. The instrument panel should have enough mechanical feeling to convey the impression you are in an object that *has* motion."

Outside Exner's office we had a chance to inspect, admire, photograph and drive the wheeled results of his love affair with metal. It was the Dart, reported to represent a \$250,000 investment by Chrysler's Research Group. The car was born three years ago, when instead of dreaming or trying to out-guess public preference in a distant future, Chrysler used a 500-pound $\frac{1}{8}$ -scale-size plastic model for tests in the University of Detroit's wind tunnel. The little car's miniature cooling system included an operating fan, the wheels rotated, and the undercarriage was a detailed duplicate of 1957 production models.

While students in Detroit were working with their scale model, Chrysler selected Carrozzeria Chia of Turin, Italy to create a car around aerodynamic facts revealed by wind tunnel tests. Chrysler specified dimensions of the car and certain styling features, and supplied advanced engineering innovations for the chassis, engine and other portions of the car. Except for these considerations, shape of the Chia was to be determined solely by the form (of car body) which showed the least possible air disturbance in aerodynamic research. Literally a laboratory on wheels, since its completion the Dart has undergone rigorous tests, traveled an esti-

Dart



LABORATORY ON WHEELS, Chrysler's \$250,000



ROOF RETRACTS under rear canopy for open-air ride.

mated 85,000 proving ground miles and will soon be replaced by other more advanced design engineering and styling prototypes.

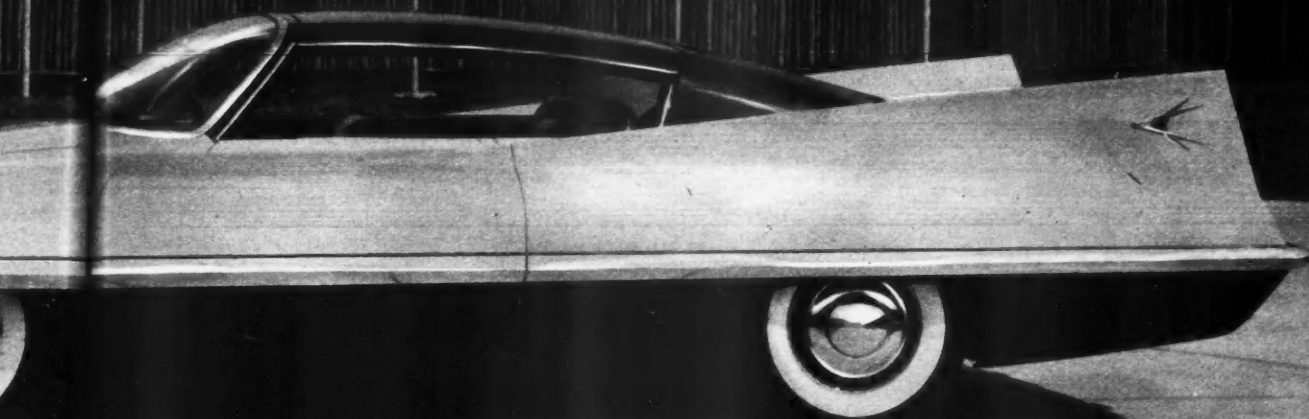
How practical is it?

Pretty good as a laboratory on wheels. From it Chrysler learned much about brake cooling, proved the value to economy of undercarriage streamlining, sampled new methods of converting a hardtop to an open car, tested a new unit-body-frame assembly, and re-discovered the old hot-rodder's trick of leaning the radiator rearward to gain a lower hood line.

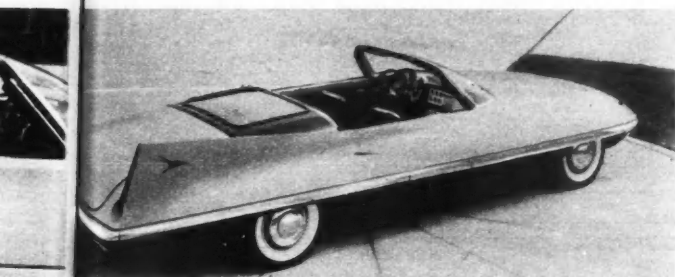
Unfortunately the Dart would be a nerve-wracking car to drive every day. Fenders and hood slope so rapidly there is no way (except by guessing) of knowing where the fenders are, the windshield leans back so the header is only inches from the brow of a tall person, there is no room for legs or heads in the back seat and it rides like a truck.

There was plenty of leg- and torso-room in the front seat, controls were where you'd want them and the steering wheel position was ideal for fast handling. A very stock key starter fired up the much-modified 300 Series engine while a finger on dash-mounted transmission buttons put us in forward motion. So we toured the factory grounds. Stopped, took off, cornered — trying to get the feel of Chrysler's laboratory on wheels. But it wasn't a happy car at slow speeds. The Dart was designed to fly, and fly low, over long distances at high speed in the best turnpike touring tradition.

Designer Virgil Exner threw a wet blanket over any thoughts that the Dart is a preview of what Chrysler cars will look like in the future. Its shape suggests just one way of reducing wind resistance. "Our task," he said, "is to design



\$250,000 Dart was designed by Ghia around aerodynamic principles, has clocked 85,000 proving ground miles.



FROM ANY ANGLE Dart fulfills aim of "look of motion."

an automobile whose appearance will be admired by the public and whose performance will be aided by its shape . . . And in case you're curious, we'll be using fins until something better comes along."

WHAT ABOUT TOMORROW? But what about the car that you and I might expect to drive in the next five years or so?

The exterior styling pattern seems set by idea cars of the three big corporations, which use basic themes: Chrysler, the wedge or dart shape; GM, projectile shape or submarine on wheels; Ford, the low square box, with rounded corners.

Interior design is pretty well stuck with one basic problem, according to Robert F. McLean of GM's Styling Staff, who said, "Pertaining to any vehicle, the layout of the passenger compartment starts with a consideration of the space per passenger necessary for comfort . . . It is conceivable, with present trends in shoulder room, that a four-passenger [seat] width might be achieved . . . getting in and out of such a wide seat might prove to be inconvenient . . . Free floating seats in a spacious interior, featured in the dreams of automotive prophets, pose several problems . . . It is difficult to arrange even four passengers in a free 'conversational' arrangement without great increases in interior dimensions."

So we'll still have seats, and probably bucket seats at that. Other designers point to windows that won't roll down; sides of a car that tilt, slide, roll or evaporate to permit entry into the passenger compartment; flat floors; heating and cooling all around; and a much lower noise level. Controls will be limited to a shaped wheel for direction, a plate or pedal for "Go" and another for "Stop." What sort of instruments are in store for us may be gleaned from a suggestion by Dr. Law-

rence R. Hafstad, Vice President in Charge of Research Staff, General Motors. He has stated: Two instrument panels might be better than one, with the first, fully instrumented, serving for engine performance analysis at zero or near-zero speeds, then at 30 mph being covered by a thick safety cushion, leaving only the audio or video speed signals and a warning light to notify the driver of engine malfunction.

Once the body has been styled, trimmed and instrumented, the question of construction arises. Though most frameless construction (Lincoln and Rambler) as we know it today is not truly frameless in the aircraft sense of using stressed panels, it is probably what will continue to be used in cars of the immediate future. One reason is that in a Douglas DC-7 airplane the 6½ per cent of cabin surface cut out by windows and doors does not contribute to structural rigidity of the aircraft. On the other hand, in a typical two-door hardtop, almost 50 per cent of the body is cut out by doors and windows. Therefore, to be suitably rigid an auto body must contain frame members and cannot rely on skin stressing alone.

Brakes and wheels are expected to stay around for a long time to come, although there is a chance that wheels could be replaced by air jets or levipads (May '58 MT), or by propellers, as suggested by recent drawings released by Chrysler. Tires are not scheduled to use smaller rims, but may get oval-shaped (fatter) or use wide base rims in order to reduce tread diameter. Brakes (we saw huge five-inch-wide finned aluminum drums in one laboratory) are going to get wider, will have airscoops or blades and just about every other cooling device the slide-rulers can think of.

Everyone we talked with in Detroit put on sack-cloth and ashes when the subject of flat floors and driveline humps was mentioned. It seems this is the number one whipping-boy subject in all design studios, which leads us to believe the driveline will soon dissolve into a minor problem as de Dion rear end or some yet unannounced method of differential power transfer is brought to light. Multiple-speed automatic transmissions seem to be going down the drain, for not a single "dream car" or future prototype we saw had more than "D-N-R."

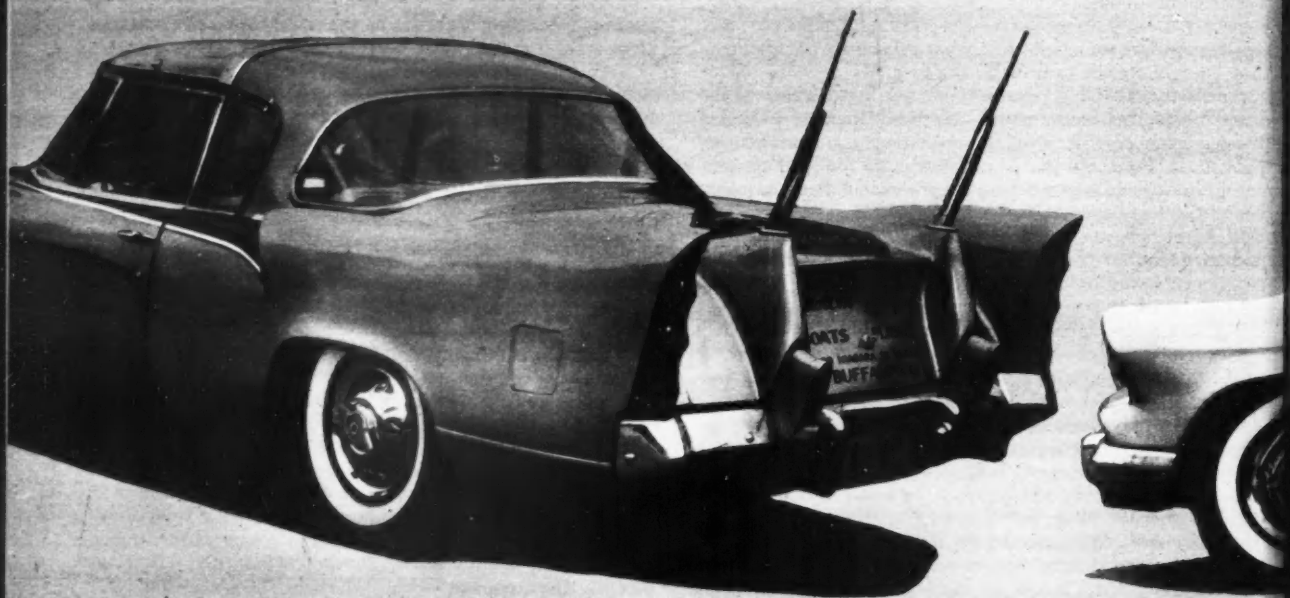
We jumped about 10 years ahead in power sources during an interview with William Turunen, Head of GM's Engineering Development Group, who said, "It is certainly feasible and possible to power a car with a gas turbine. Fuel con-

continued on page 81

Knight in



SCULPTURED glass fenders and hood surround the restyled grille featuring floating bars and honeycomb scoops.



DISTINCTIVE DECK FINS and twin antennae join with mock tire shell in stylized use of plastic.

in Glass Armor

**"Golden Ray" blends metal and plastic
in growing "custommodernizing" trend**

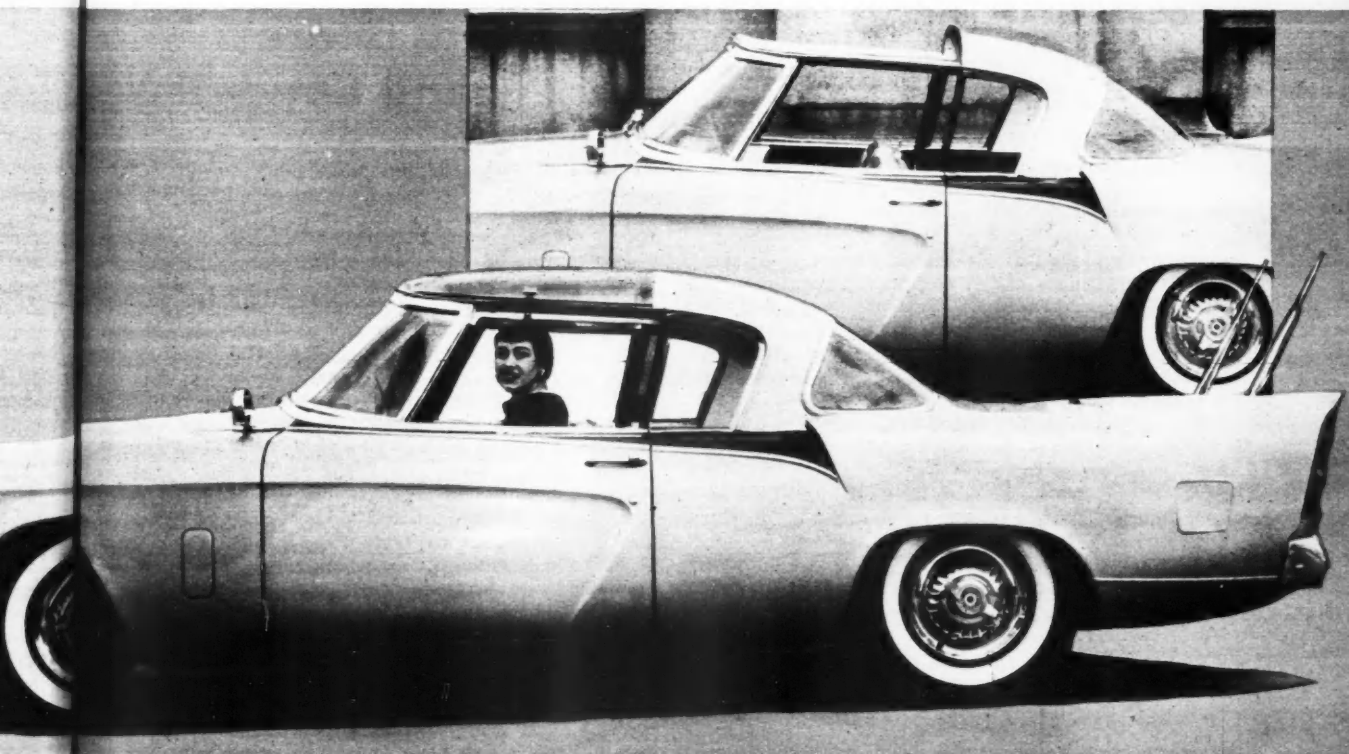
TO DRAMATIZE THE OPPORTUNITIES for customizing that plastic offers, Custom Craft of Buffalo, N. Y. has created the Golden Ray, a '53 Studebaker stylized through the use of their Armor Glass polyester and epoxy base resin. Known for their boats and packaged boat kits, Custom Craft has set out to test and to prove the workability and durability of modern reinforced plastics when bonded to car metal.

Combining style with function, the Golden Ray's Armor Glass features include individualized tail fins (for high-speed stabilization), trunk lid with antenna mounts, sculptured

fenders and hood, functional front and rear airscoops, and full-breathing grille. Another striking feature is the removable transparent plastic half-roof.

Designed by Custom Craft's president, H. Donald Canazzi, the Golden Ray is more than just a gilded lily. Engineering-wise it boasts a 388-cubic-inch Cadillac engine with Hydramatic transmission, torsion bars, dynamically balanced crankshaft, and platinum-tipped plugs and breaker points. Its 10 to 1 compression engine, with special carburetion, operates on butane gas.

—E. M. R.



TRANSPARENT HALF-ROOF is detachable for open-air comfort. Scoop at rear corner post is functional.



HILLMAN
HUSKY

FOUR IMPORTED WAGONS

**Here's a nimble quartet that offers
utility, economy, quality and fun**

WARTIME INDUSTRIAL EXPANSION, with its resulting suburban population concentrations, forced rapid development of the station wagon. Added emphasis was furnished by a rising consumer market, larger families, the "do-it-yourself" trend, and the urge of returning servicemen for weekends and vacations in the wide open spaces. Competition for this new market became so torrid among U. S. manufacturers that the station wagon quickly jumped into the higher priced brackets, and grew too large and cumbersome for practicability.

With all of the slow, maddening, stolid "wait and see" of Henry Ford, the European automobile manufacturers studied and re-studied this expanding demand to see if it was here to stay, looking for a slice of the American market not covered by their Detroit counterparts.

Results of this extensive research have produced some interesting vehicles. From a substantial list of these "market gappers" the editors of *MOTOR TREND* selected four for testing — the first, for rugged terrain and incidental hauling in addition to family use; the second to be a contender for the "second car" market, which would be economical and handy for urban shopping; a third, to approach the luxury of U.S. wagons and still have good handling characteristics; and the fourth, to meet the needs of the sportsman.

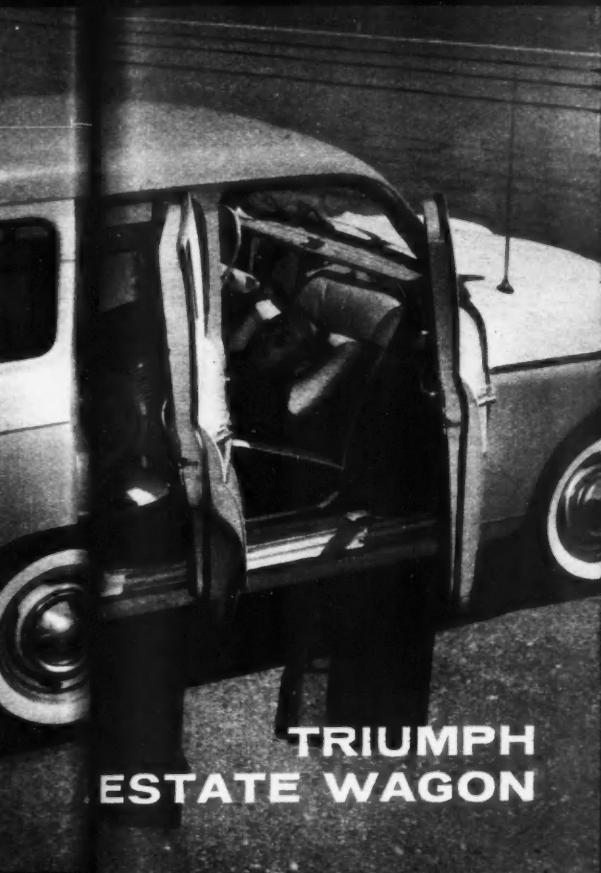
HILLMAN HUSKY

One gap in the American station wagon market is that of a really husky carrier, which can double as a family machine

if needed. A wagon like this would fill the needs of rural areas and ranches, as well as TV repairmen, photographers, and other professionals who don't need a truck and an automobile. Of the wagons designed for this job, the Hillman Husky seems to be tailor-made. It has the pulling power of a Missouri mule, the ruggedness of an Arabian donkey, plus the ability to gallop down the turnpike in the middle 70s.

Boasting a new 85-inch ohv unit in place of the old side-valve mill, and some of the styling of the Hillman Minx, the new Husky is 10 inches shorter and sells for less than the sedan. With its 86-inch wheelbase and box-like shape, the Husky is susceptible to pitching on bad roads and shifts in the wind. However, the unit construction and extra strength of the two-door body absorb the rattling and pounding usually associated with station wagon bodies on rough surfaces. At first the car imparts a top-heavy feeling because of the high seat squabs and body shape (the cargo area being almost as high as the body is wide), but the Husky handles high-speed turns surprisingly well.

Finish and color harmony (Rootes group forte) are of good quality. The dash is simple and uncluttered, with instruments centrally grouped. The speedometer, though out of line with driving vision, is easy to read because of its large diameter and clearly defined numbers. Only the driver's seat (bucket type) is adjustable for legroom, but both are quite comfortable. The rear seat is a bench type, which folds forward (à la Rambler) when carrying cargo. The back (or bottom)



**TRIUMPH
ESTATE WAGON**



**BORGWARD
ISABELLA COMBI**

M TEST BY BOB ROLOFSON

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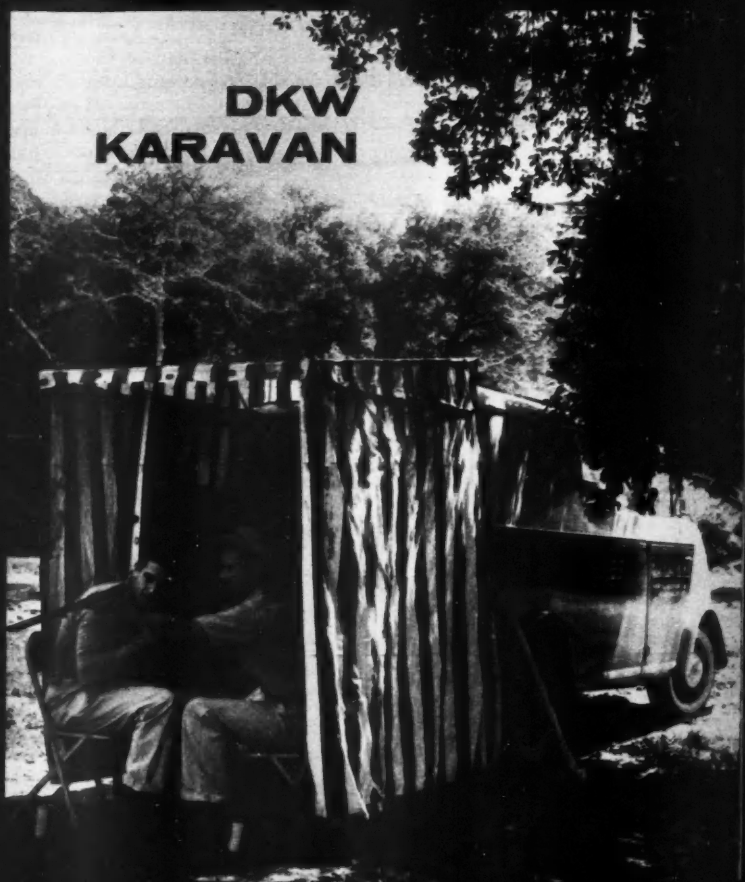
of the seat is ribbed steel, which not only acts as protection for the upholstery, but provides a strong bulkhead to contain shifting cargo in case of a sudden stop or accident.

Not counting two front seat passengers, the payload weight is advertised at 600 pounds, ample for most uses to which a car of this size would be put. Cargo floor area with the rear seat up measures 29 by 50 inches, and 51 by 50 inches with the seat folded. To help the suspension cope with maximum loads, the designers included an overload spring in the rear suspension. This spring isn't activated until weight is added, or the body weight suddenly depressed—a situation I set up by driving the Husky off the road and through the brush for several miles. It takes a really severe series of deep ruts or chuck holes to make the Husky bottom.

The long-handled, floor-mounted shift lever rows a four-speed box which is realistically geared for the Husky's services. First is an emergency low, perfect for crawling through creek beds and up the sides of slopes. Second acts as the starting cog, third peaks at about 56 miles per hour, and fourth will shove the little hauler into the middle 70s. However, because of the gearing, there is considerable engine noise above 55 miles an hour.

Braking on the Hillman Husky was excellent, tak-

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**DKW
KARAVAN**

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HUSKY'S INSTRUMENTS are easy to read. Package shelf under dash runs full width, offers very handy storage space.



VERTICALLY HINGED rear door provides easier loading than with tailgate, but restricts load lengths.

IMPORTED WAGONS continued

ing 19 slow-down stops from 60 to 20 miles per hour, plus a final all-out panic stop. Although they produced a snootful of odor, fade was almost imperceptible.

In spite of the rough use to which we put the Husky, it averaged from 22 to 26 miles per gallon in 266 miles of city driving. In 144 miles of

32-foot turning circle and 12-foot overall length make for good maneuverability and slip-in parking. On the highway the car will cruise beautifully between 55 and 60 miles per hour, and will even hold its top speed of just over 70 with little fuss. Being a light car (1810 pounds curb weight), it is susceptible to crosswind. However, any tendency to weave off course is easily controlled with its quick (2.5 turns lock-

MTEST BY BOB ROLOFSON

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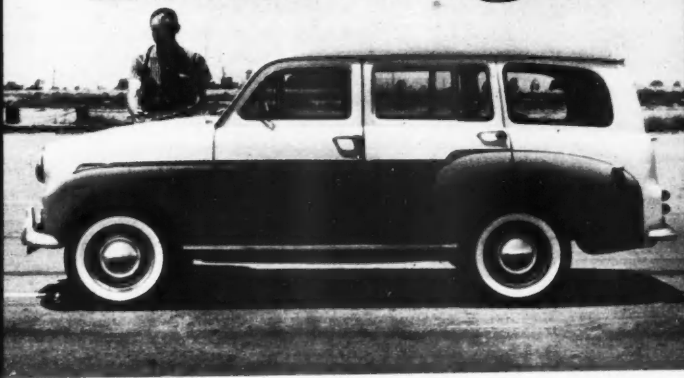
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DKW KARAVAN



TRIUMPH Estate Wagon



TRIUMPH ESTATE WAGON makes more effective use of its rectangular shape than any other wagon. Cargo can be loaded through rear side doors or back. Rear seat offers "hidden" storage space.

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to 57 by 50 inches. Cargo can be loaded through either of the rear doors, or through the vertically hinged door at the back, which replaces the tailgate transom found on American wagons. While this wide door takes the work out of loading and unloading, it limits cargo in length.

The four-speed gearbox in the wagon is almost as much fun to use as the TR unit, except for the reverse cog which hides in the lower-left-hand corner of the shift pattern. To reach

handsomely fills a gap grossly overlooked by American manufacturers. At the \$1899 (port of entry) price, it is a tough contender in the "second car" market.

BORGWARD ISABELLA COMBI

MT's nomination for a good handling luxury wagon goes to Borgward's Isabella Combi, a two-door wagon with interior and exterior finish comparable with machines in the high





HUSKY'S INSTRUMENTS are easy to read. Package shelf under dash runs full width, offers very handy storage space.



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IMPORTED WAGONS continued

ing 19 slow-down stops from 60 to 20 miles per hour, plus a final all-out panic stop. Although they produced a snootful of odor, fade was almost imperceptible.

In spite of the rough use to which we put the Husky, it averaged from 22 to 26 miles per gallon in 266 miles of city driving, and from 24 to 27 miles per gallon in 144 miles of highway travel. This, plus the low initial price (\$1639 port of entry), ruggedness and versatility of the Husky, makes it an excellent buy as a multi-purpose vehicle.

TRIUMPH ESTATE WAGON

The Triumph wagon definitely fills another gap in the American market. If ever there was a car designed for suburban (and city) shopping, this is it. It should be renamed the "Market Wagon," or the "Housewife Special." Handling is virtually effortless, steering is light and positive, and the

32-foot turning circle and 12-foot overall length make for good maneuverability and slip-in parking. On the highway the car will cruise beautifully between 55 and 60 miles per hour, and will even hold its top speed of just over 70 with little fuss. Being a light car (1810 pounds curb weight), it is susceptible to crosswind. However, any tendency to weave off course is easily controlled with its quick (2.5 turns lock-to-lock) steering.

Economy-wise, this one rates near the top of the list. In 367 miles of traffic driving, I averaged between 27.7 and 32.5 miles to the gallon. Highway travel (slightly more than 181 miles) produced from 29.6 (65-70 mph) to 38.7 miles per gallon.

The box-like shape of the little car falls short of styling acclaim, but comes closer to utilizing the whole of a cube for usable space than any other wagon. With the rear seat up, there is still a cargo area behind the seat of 35 by 50 inches. With the seat folded down flat, this area is increased

PULLING POWER of a Missouri mule, plus ruggedness of an Arabian donkey combine with ability to gallop in the 70s.

85-CUBIC-INCH ohv engine replaces former side-valve, gives better performance, 22-26 mpg in city.

HILLMAN Husky



TRIUMPH

Estate Wagon



TRIUMPH ESTATE WAGON makes more effective use of its rectangular shape than any other wagon. Cargo can be loaded through rear side doors or back. Rear seat offers "hidden" storage space.

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The four-speed gearbox in the wagon is almost as much fun to use as the TR unit, except for the reverse cog which hides in the upper left hand corner of the shift pattern. To reach this slot the lever must be lifted over a safety cog. Normally it's a simple operation, but this lever is bent, the socket located under the dash. Therefore, lifting this stick out of the socket is like lifting a shovelful of dirt by using only the very end of the shovel handle. It seems that the former arrangement made it too easy to engage reverse by accident. Now they plan a modification for a "happy medium."

Brakes gave the same number of slowdowns — 19 — as the Husky.

Everything considered, this newest of the Triumph family

handsomely fills a gap grossly overlooked by American manufacturers. At the \$1899 (port of entry) price, it is a tough contender in the "second car" market.

BORGWARD ISABELLA COMBI

MT's nomination for a good handling luxury wagon goes to Borgward's Isabella Combi, a two-door wagon with interior and exterior finish comparable with machines in the high price bracket.

Beginning with a step-down floor, the interior spaciousness of the Combi is amazing for a car of its exterior dimensions. Paint, chrome and general finish are excellent, both inside and out. Upholstery is of tough simulated leather, and is complemented by a handsome felt headliner which has been put in to last. The steering wheel is mounted in a nearly upright position, and the seat is fully adjustable for us of the arms-outstretched European driving habit. Shift pattern on the all-synchro four-speed transmission is operated with a

CARGO AREA is large and uncluttered. Brackets are being designed to secure spare, tools beneath floor.

LEGIBLE DIALS are read through two-spoke wheel. Reverse shift is a bit tricky.





DETAILED PLANNING of the Combi is apparent even under the rear decking where tools are held against rubber mounts by steel springs; spare sets in rattle-proof well.

Photos by Bob D'Olive

BORGWARD

Isabella Combi



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FOUR IMPORTED WAGONS

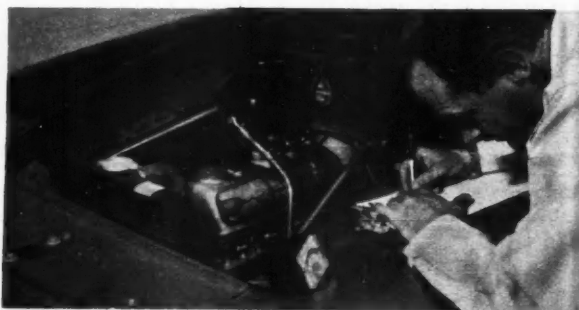
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column-mounted lever. Although this box feels strong and positive, the throw between the top and bottom of the box is ridiculously long, which helps account for a zero to 60 mph time of 22.6 seconds!

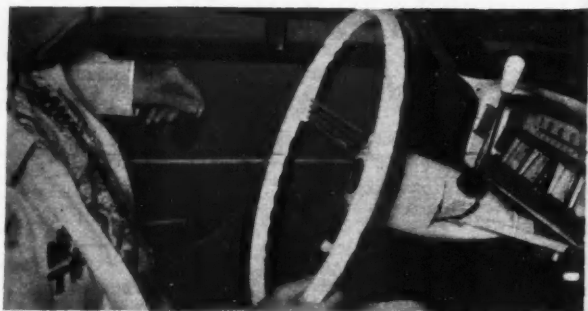
The instruments are grouped behind the wire-spoked wheel, where they can be read at a glance. In addition to a large speedometer (with trip-meter) are temperature and fuel gauges and clock. Bright, dim, and turning indicator lights register in a small dial below the speedometer, making night driving easier and safer. Radio, starter button, wipers and other hand controls are grouped in the center of the dash. Beneath these is the fresh-air and heater mixing panel which provides fresh, heated air, in any combination. This heater, on full, can literally broil front seat passengers, even in winter weather. A lockable glove compartment is supplemented by large elasticized map pockets in the doors.

Frosting on the cake are the roll-down quarter windows which provide excellent cross ventilation when the sliding rear windows are partially open. The husky jimmy-proof locks on the rear windows are bolted *through* the glass. A small thing, but a Detroit wagon I once owned had these gadgets glued on, and I was forever picking them off the floor, or losing them out the window. Visibility is excellent, with non-distorting glass panels framed by thin pillars. Cargo area with the rear seat down measures 60 by 53 inches. The back of the seat is of ribbed steel, matching the floor. When the seat is dropped, it locks, eliminating rattles. The lock is released and seat lifted by a husky handle, which folds into a recess in the deck panel.

The 66-horsepower four-cylinder in-line mill nestles in a



ENGINE components are readily accessible for service.



REAR DOOR CRANK rolls window, is awkwardly placed. Column-mounted shift lever has unusually long throw.

COMBI QUALITY can match higher-priced wagons.

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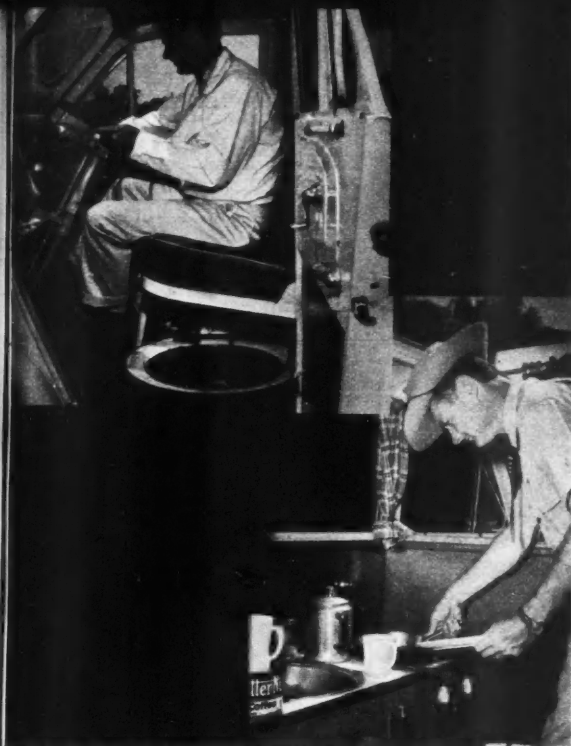
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UNDER-SEAT SPARE serves as step to high seat. Opened sunroof permits cook to stand when using fitted galley.

well-designed compartment, with fusebox, brake fluid reserve, battery, wiper motor and engine components accessible for inspection and maintenance. Sporting a top speed of just over 85 mph, and lugging a test weight of 2540 pounds, the Combi averaged from 20.4 to 20.5 miles per gallon over 332 miles of stop-and-go traffic, and from 25.8 to 31.4 miles per gallon over 228 miles of highway driving.

Steering is right and precise, with no wander or kickback. The swing axle setup takes some getting used to, but once mastered, it makes cornering a pleasure. On short radius turns (at 35-45 mph) the Combi sticks like glue, raising the inside wheel off the ground. It took the 20-stop brake test with no fade, no swerve, and no odor!

Although the Combi needs the 85 horsepower TS engine to vitamin-ize acceleration times a bit, its road performance, cornering, and excellent detailing qualify it for our third "market gapper."

DKW KARAVAN

Every season the migration of fishermen, hunters, campers and trailer "gypsies" seems to double in size. Transportation for these sportsmen is becoming a big business and at the same time a big problem for potential consumers. Except for a handful of foreign "campers," the field is pretty well limited to house trailers or cabins bolted to pickup trucks. Our candidate for this market is the DKW Karavan — a three-door, powered house trailer.

When I picked the Karavan up at the Peter Satori showrooms in Pasadena, they told me to give it a real "live" test. Two days later the family (all five of us) was merrily crossing the sun-baked desert wastelands of southeastern California, on a 700-mile wild flower tour. During this jaunt my

continued on page 58

RAISED HOOD, containing headlight lenses, permits mechanic's-dream accessibility to engine components, electrical system, fuel and water tanks.

DKW Karavan



ROOMY KARAVAN has rugged truck chassis with front-wheel drive. All side windows roll down for ventilation.





driving
around



with
walt
worn

THIS IDYLIC SPOT WAS TYPICAL OF RESTING PLACES FOUND ON THE ROUND-THE-ISLAND TOUR IN THE SIMCA OCEANA



TRAFFIC was never heavy in Oahu, but it kept you alert.

RAISING or lowering Simca's top was an easy one-hand job.



ON THE LEEWARD side of Oahu the surf was much more calm.

RECLINING SEATS were just one of the Oceana's comfort items.



SUGAR CANE fields stretch for mile after square mile.

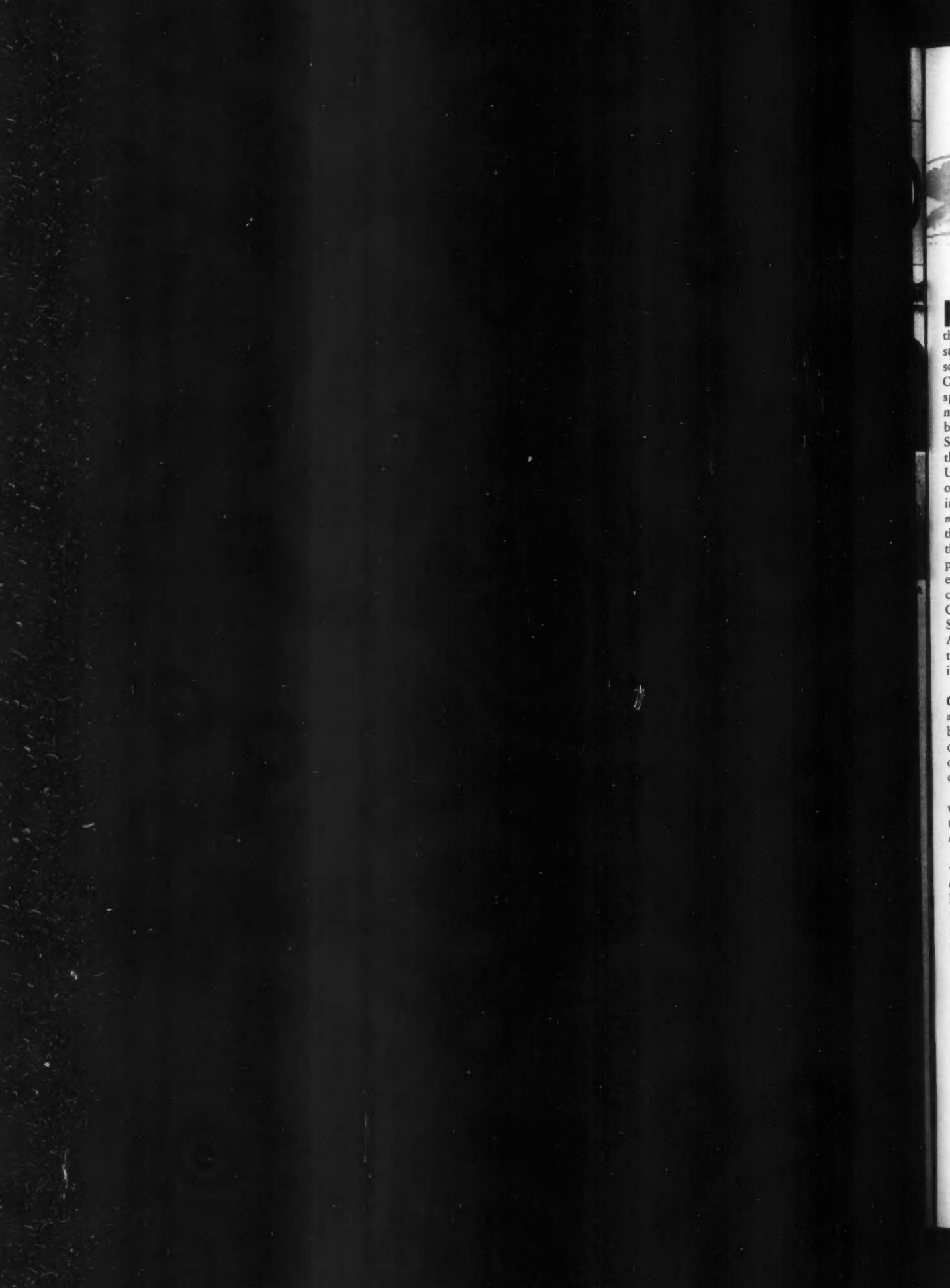
WITH TOP UP, vision out the rear and to the sides was good.



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OCEANA



HAWAII

INCIDENTAL BITS of sometimes useful information about the land of pineapples, hula girls, and surfboard-riding—things that you'd never know unless you own an encyclopedia, are a student of geography and history, or are lucky enough to spend some time in Hawaii: The group of eight islands—Hawaii, Oahu, Molokai, Maui, Kauai, Niihau, Lanai and Kahoolawe—spreads over the south Pacific in a 390-mile chain roughly 2100 miles west-southwest of San Francisco . . . They were discovered by the English explorer, Captain Cook, who named them the Sandwich Islands . . . It was ruled by native monarchs until 1893, then was a republic for five years, when it ceded itself to the United States . . . Though its temperature is mild, the island of Kauai has the highest maximum average rainfall of any spot in the entire world—a staggering 472 inches per year. This is merely eight times greater than the wettest state (Louisiana) in the U.S. . . . Cane sugar and pineapple are its chief products, though it also grows coffee, rice, bananas, papaya, nuts and potatoes . . . Tourists form its fourth largest business . . . Its entire population could be swallowed up in any of our larger cities, is slightly less than that of New Orleans, about equal to Cincinnati, Ohio, and slightly more than Kansas City, Mo. and Seattle, Wash. . . . The question of statehood (especially with Alaska becoming our 49th) is ever stronger, though the fact that it is racially heterogeneous seems to constantly stand in its way.

CARS? OH YES . . . IT HAS 150,000 on the island of Oahu alone—or one for every three persons; this also happens to be more than three times as many as on the other seven islands combined. Frankly, I expected to see not as many, and far older, cars. The newer ones seemed to be in the majority. This, of course, could be due to the large military population.

Even though most of the cars appeared to be of the post-war variety, it is a Ford Model A fancier's paradise. In the space of two hours of driving around, I counted no less than 10! You don't see that many even in the city where they were built.

It is also surprising to see as many large cars as you do, what with gasoline in the 39-cent category for regular and 42-43 cents for premium. You hear so much talk about cab drivers knowing the right cars to drive for best economy of operation, yet we took a ride in a '56 Olds cab which drew my attention to others; then I noted even late-model Cadillacs performing this service.

The swing *does* seem to be away from the larger cars, for the small imports (even at their inflated prices of roughly 25 per cent over stateside) have climbed to 40 per cent of the new-car market. A quick check of the Yellow Book indicated about a two-to-one ratio of U.S. car dealers to the eight imported car dealers; the latter included A.C., Alfa, Aston-Martin, Austin, Borgward, Citroën, Cooper, Fiat, Ford, Hillman, Jaguar, Lloyd, Lotus, MG, Morris, Siata, Simca, Standard, Triumph, Volkswagen, and probably any other that you would want.

In driving around the island (which is exactly what we did except for a not-too-easily passable dirt trail across the northwest tip), we had a Simca Aronde Océane at our disposal. This is the convertible version of the Plein Ciel, a 96-inch-wheelbase two-passenger job weighing 2100 pounds that's pulled along by a too-inadequately-powered four of 77 cubic inches that gives

60 horsepower. After picking it up from George Thornally, General Manager of George Motors in Honolulu, we drove around the "downtown" area.

To understand what Honolulu—and the island of Oahu—is like, I believe you have to drive around as we did. We were staying in Waikiki, which is the glamour spot for tourists, with its big hotels, nightly shows, miles of white beach, and low, rolling surf. Here you can lie on the sand, or partake in the water sports of surfing, swimming, or riding on the outriggers and catamarans. But, Waikiki is not Honolulu, Oahu, or Hawaii. In fact, from what I can gather, the old Hawaii is fast disappearing.

HONOLULU IS A BUSTLING CITY-COUNTY of 303,000 people, which is $\frac{3}{4}$ the population of all Oahu. It's also the seat of government for all Hawaii. Traffic problems exist there as in any other growing community. It was not too long ago that the number of auto fatalities got so high that the Governor declared an emergency; since then the police have clamped down hard on traffic violators. This must have been why in driving around the periphery of Oahu we had no difficulty staying with what little traffic there was. The only police we saw in our week's stay were two unmarked cars, yet drivers were careful to observe the speed limits of 25-30 in congested areas and 35-45 in the open. As the roads improve—they're now mostly two-lane, with some wide, divided four-lane—more cars will probably pour onto them.

Of course, there's another, and deeper-rooted, reason why the Kamaaina (native Hawaiians) don't travel fast; their entire pace of life is slower. You get caught up in this from the moment you set foot on Hawaiian soil, or the head-shaking looks at the Malihini (newcomer, or tourist) will soon slow you down—and you welcome it. Hawaii is a place to *relax*.

Since driving to me is a form of relaxation, we took three separate trips with the Simca. The first one was an 86-mile round trip through Honolulu, past the impressive sight of Pearl Harbor, through miles of sugar cane fields on the southwest tip of Oahu, along the lee side of the island to Makua (a large cave) and return. A short way beyond, the road turns into the dirt trail mentioned previously. For the second tour, we started from Waikiki, drove to the southeast tip to see Koko Crater and Blowhole (a curious rock formation that spouts water like a geyser as the tide comes in), northwest up the windward coast (you skindivers would flip over the clear, blue water!), around the northern tip through more sugar cane fields, bisected the center of the island and its mile-after-mile of pineapple fields, through the island's second largest town of Wahiawa to Pearl Harbor, finishing the 113-mile trip in Waikiki.

The third trip was from Waikiki through Honolulu, past Pearl Harbor, and up the center of the island to the northern side where the Hawaiian Road Race was held on an abandoned airstrip. In all, I put some 300-odd miles on the Océane, averaging 24.7 mpg for the diversified driving conditions. That's enough to tell you why the swing is to the imports in Hawaii. The Océane's speed—or lack of it—size, and the fact that the convertible top can be raised and/or lowered so easily to keep out the oh-so-frequent rain or let in the sun, make it quite ideal for the "Paradise of the Pacific."

/MT



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HANDY hints

by Rodger Darling

CONDENSER CONKED OUT?—If starting failure leads you to suspect your distributor condenser, you can make this quick check to see if it is shorted out: Open distributor cap and, with the ignition on, bridge the breaker-point gap with a screwdriver to see if it sparks. If not, disconnect the condenser wire and try for a spark again. Sparks this time prove that a defective condenser has been stealing your electricity. (Don't get dirt between the points, or you won't go even with a good condenser.)

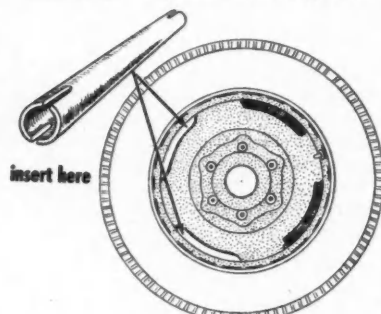
DETECTIVE WORK—To trace an elusive oil leak, clean the suspected area and dust with talcum powder, using a garden dust gun or similar sprayer. The leak will then show up clearly on the white powder.

HOT WEATHER'S HIDDEN LOSSES—(1) Check your battery more often in the summertime because heat evaporates the water faster... but don't over-fill, for a too-full battery charging at rapid summer rate can "boil over," causing corrosion and loss of electrolyte. (2) Likewise with your cooling system: Do not over-fill or expansion overflow will add to evaporation loss. (3) Gasoline evaporates too—as fewer miles per gallon will sadly disclose—if you park your car over-long in the hot summer sun. A 20-gallon tank filled with gas from cool 70° underground storage will overflow a heat-expanded half-gallon on the street in 100° heat.

VACATION PACKING POINTER—Car space at a premium? Stow soft clothing in laundry bags, which then serve as comfy overstuffed pillows welcomed by young and old for rests and naps.

SAVE EYE STRAIN—If you have to drive a long distance into the bright sun you may find highlights reflected from your highly polished hood almost as blinding as the sun itself, and too low to be shaded by the sun visor. You can get rid of this annoying dazzle by spreading some car polish wherever needed on the hood or cowl, where it will dry into a non-reflective coating that can easily be wiped off later.

ROCKS IN YOUR WHEELS?—Some new car owners don't realize that their wheels still possess wheel slots (hidden by oversize wheel covers) until—investigating strange wheel noises—they find that road gravel has

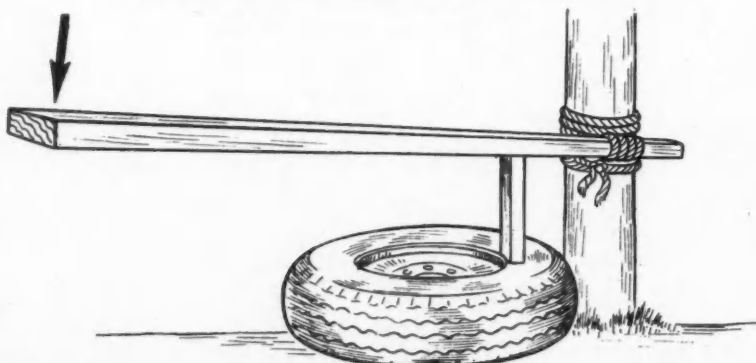


come through the openings and is rattling around inside the wheel covers. You can keep gravel out by plugging these slots with strips of wiper hose (or other material) cut a little oversize and notched at the ends to hold them in place.

LET STAT STAY—You've heard arguments pro and con, but we say, "Leave the thermostat *in* during hot weather (provided it opens fully and isn't the 180° winter type)."

Why?

(1) The cooling system was designed for it, and removal may leave a passage so unobstructed that coolant can surge out through the pressure cap. (2) Engines warm up more quickly and run better with thermostat-retained heat, preventing fuel waste, engine wear, oil contamination, etc. (3) Even during the hottest months you may start in early morning or midnight hours when the air may be as cool as autumn days and lack of the thermostat can over-cool your engine.



TIRE STUCK TO RIM?—Trying to "break the bead" of a stubborn flat with a bumper jack may hoist your car more than it depresses the tire; and you can't ride up onto the flat to loosen it if you have only three wheels

on your car. So rig up a "bead-breaker" by lashing a two-by-four to a post or telephone pole, positioning a vertical piece as shown, thus giving you tremendous tire-freeing leverage directly down on the bead.

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Also available for late Ford and Merc Transmission.

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Dodge 53-57
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Chrysler 54-57
Plymouth 55-57
Buick V-8 53-56
Lincoln 52-57

The following adaptors are also available for the early Ford and Merc Transmission:

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Chrysler 54-57
Plymouth 55-57
Buick V-8 53-56
Chrysler 51-53
Lincoln 52-57
Lincoln 49-51

Flathead Studebaker 51-57 (not 56 Golden Hawk)
Packard 57 only
Packard V-8 thru 56 and Golden Hawk 56

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STOPS STALLING

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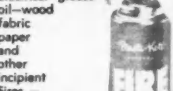
Give Wheel Size BEST QUALITY \$5.95 Set of 4 HONEST No. 9

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CHROME TAPE A GLEAMING SELF STICKING Chrome Tape for thousands of customizing ideas. FEATURED in May issue of Rod and Custom Magazine—Use on dash or outside. Many Household Applications.



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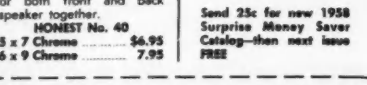
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NEW AERIAL BOOSTER Multiplies Volume by 2 in your car radio, reduces fading — Simple 5 Minute installation.



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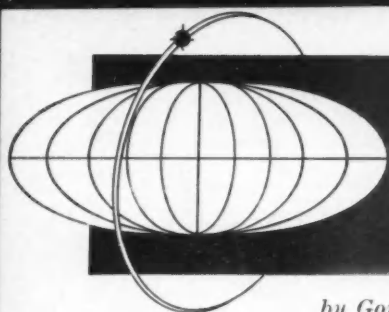
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AROUND THE WORLD IN THIRTY DAYS

by Gordon Wilkins European Editor

BRITAIN

With the formal announcement of the Twin Cam MG-A, eager sportscar fans may now look forward to some tremendous performance from the Mighty Midget. BMC has enlarged engine displacement to 96.9 cubic inches (1588cc) to take advantage of the International Touring Car Classification. With 9.9 to 1 compression, the engine develops 107 bhp at 6500 rpm. (This is the latest horsepower figure available and may vary as the factory performs occasional minor modifications.)

Camshafts, driven by a Duplex roller chain, operate the valves at an angle of 80 degrees. The three-main-bearing crank has been stiffened and new rods and pistons have been designed to take the additional

caliper-type disc brakes all around, road-speed tires and center-lock knock-off disc wheels. The wheels and extra nameplates on hood air exits and trunk will serve to identify the car.

Early reports from factory test drivers indicate acceleration times which should delight MG drivers who would enjoy a fair chance at the Porsches in production car racing. Zero to 100 takes 30.4 seconds and another seven seconds shows 110 mph. Claimed top speed is 120 mph. A brief opportunity to drive the car revealed greatly improved handling due to stiffer front suspension—a truly remarkable car. The Twin Cam A will be manufactured in limited quantities in both coupe and roadster versions. Better get your order in now.

Twin Cam MG-A promises to be fierce racing contender....

Mercedes 300-SL roadster makes into coupe with steel top....

Bodywork, by James Whitson and Co. Ltd., is similar to Fiberglas wrapped handsomely around a multitube space frame. This, incidentally, makes it the only British production car at a comparably low price to use a space frame. Another handling nicety is the de Dion rear axle.

Claimed top speed is 120 mph, quite likely in view of reduced weight and better streamlining as compared to the TR-3. In a recent British test, the Peerless clocked 0 to 50 mph in seven seconds; to 60 in 9.8 seconds and to 80 in 18 seconds.

Understanding is that a distributor has ordered 600 for U.S. consumption, deliveries to begin this fall. Price in Britain (less purchase tax) is about \$2800. A slightly higher U.S. price should keep sales brisk.



BRITISH PEERLESS HAS TRIUMPH ENGINE AND DE DION REAR AXLE.



FARINA CREATED LATEST BODY FOR FERRARI 250 GT COUPE.

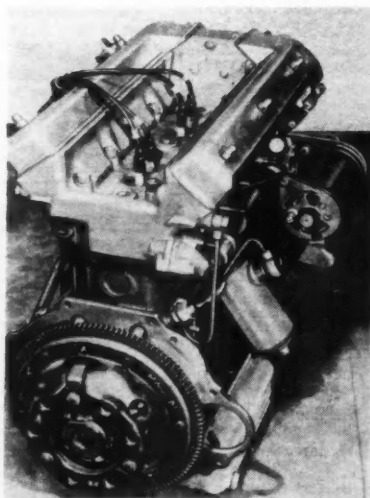
stresses which the higher performance will impose. Because the engine is slightly longer than the old unit, the radiator header tank has been moved back and mounted alongside the engine on the exhaust side.

Other mechanical features include Dunlop

Another fascinating new English vehicle just announced is the Peerless Gran Turismo coupe. A genuine four-seater, it is primarily of Triumph TR-3 components—engine, gearbox, instruments, brakes—which will simplify service problems.



VOLKSWAGEN replacement body, the Alken D-2, was raced at Riverside Raceway as culmination of test program. Body installation takes only few hours.



TWIN CAM MG-A engine is 107 hp; car sells for approximately \$3345.

English Ford factory produces record number of vehicles....Peerless has 120-mph coupe....China builds first passenger car....German Opel introduces new Kapitän....Japanese bring Datsun to U.S....Volkswagen custom replacement body available....Ferrari shows new body for 250 GT coupe

The Ford factory at Dagenham is maintaining a record output of 1800 vehicles per day of all types. Plan is to sell at least 40,000 cars in the U.S. during 1958, and quarterly sales figures reveal that this figure will likely be met.

CHINA

As a matter of academic interest the first passenger car from the Chinese industry, a four-seater four-door sedan called the East Wind, is now in production at Changchun. It is conventional in appearance, not unlike the Japanese Prince and is said to do 80 mph and 23 mpg. The international situation being what it is, export possibilities are highly unlikely. It's just as well. Spare parts from Changchun might be hard to come by.

is a handsome Pinin Farina creation which bears a scaled-down resemblance to the late Continental Mark II.

Mechanical specifications remain the same. The three-liter, V-12 engine, developing 240 hp at 7000 rpm, is continued without change. Five rear axle ratios are available which will give a top speed of from 121 to 151 mph at 7000 rpm.

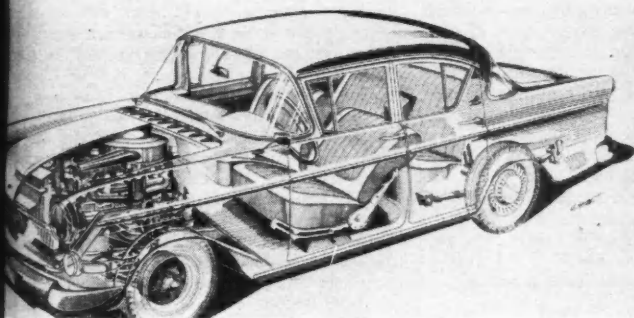
Misconceptions and misstatements about Maserati's true financial status have caused them undue disturbance and hurt, according to a recent statement by the Maserati Corp. of America. The truth is that the Orsi brothers are still very much in control of the factory. No bankruptcy petition was ever instituted against Maserati nor were any com-

Named the Alken D-2, it is a Fiberglas convertible sportscar-type body which pares 300 pounds from the conventional metal VW. This is said to give the Alken better handling, fuel economy and acceleration.

A prototype was raced in June at the Riverside Raceway, not to demonstrate it as a sportscar but as the culmination of a year-long testing program designed to prove the car before public introduction.

The Alken Corp., in Venice, Calif., plans to merchandise their body through selected VW dealers and custom shops. It retails for \$1295 complete and may be fitted to any model VW in a few hours.

A unique show in Chicago's International Amphitheatre should be of great interest to



GERMANY'S OPEL KAPITÄN "L" IS HIGHLY AMERICANIZED DESIGN.

GERMANY

General Motors German plant has just introduced its new car of the "big" class, the Opel Kapitän and Opel Kapitän "L"—the deluxe edition. The six-cylinder in-line engine with 7.5 to 1 compression, develops approximately 80 horsepower at 4100 rpm from its 2456cc capacity.

The car is wider, lower and longer than the previous model and is the most Americanized appearing automobile manufactured in Germany. Top speed is slightly in excess of 85 mph and 25 mpg economy is claimed with optional overdrive—slightly less without.

Mercedes-Benz is currently producing their exquisite 300-SL roadster with a smartly-styled, easily removable steel hard-top. The top is available as an accessory to those lucky customers who have already purchased the convertible version.

ITALY

No Ferrari body design remains static for long and the high-performance 250 Gran Turismo coupe is no exception. Latest body

pany assets impounded. To strengthen its financial position, Maserati has applied under Italian law for so-called "controlled management," a plan whereby the company can get a moratorium on debts for a stated period and can revamp its credit structure.

Production of the luxury model Gran Turismo 3500 coupe is proceeding at full capacity and is being expanded to meet increasing demand from all over the world.

JAPAN

The Datsun, a product of the 25-year-old Nissan Motor Co. Ltd., is currently being introduced as the newest economy import on the American market. Parts warehouses and service training schools are currently being added to the dealer network.

Claimed is 40-miles-per-gallon economy from the four-cylinder overhead-valve engine. Wheelbase is 87 inches and turning circle is 32 feet. The Datsun will sell for \$1799 in the United States.

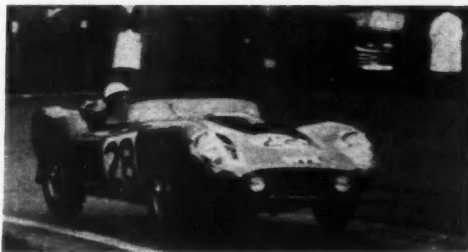
U.S.A.

It was inevitable. A replacement body is now available for the ubiquitous Volkswagen.



MERCEDES 300-SL ROADSTER OFFERS A NEW HARDTOP.

midwest motoring and flying enthusiasts. The first annual International Small Car and Aircraft Exhibition, October 24 to November 2, combines latest developments in sports and economy cars and light planes. Show organizers plan to turn the exhibit into a virtual world's fair of transportation. /MT



NEW AC-BRISTOL was raced at Le Mans by Dick Stoop and Peter Bolton to eighth overall. Beautifully finished car has new space frame designed by famed John Tojeiro, inboard disc brakes, independent rear suspension.

Floyd Clymer's

AUTO BOOKS

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Million-Dollar Idea

HADACOL HAD ITS

Dudley LeBlanc; Magna-Power has its Winthrop A. Johns. The comparison lies in the success stories, but there the similarity ends. Where one had a panacea for all your physical ills, "Win" Johns, a graduate of M.I.T., is probably the most successful producer of automotive accessories in the world today.

In just 17 years, Johns has parlayed an investment in a 1940 Ford and his \$5 item into a multi-million dollar business. (The Ford, incidentally, has 182,630 miles on it and still runs like new.) Besides the main plant in New Jersey, he has plants in Canada, Mexico, and England, with projected operations in South America and in France. Seems Johns can't produce parts fast enough to meet the demand.

To make the story even more astounding, the one part that Johns manufactures is one most persons are not even aware of—until they have their oil drained. Then they might hear the service station attendant swearing softly under his breath, "Where's that damn crankcase drain plug?"

How has Johns managed to overcome the biggest obstacle facing anyone trying to manufacture a replacement part for Detroit cars? Is it because of our innate desire to improve the performance of our cars—at the least possible cost? Or is it the magic of the pitchman's parlance? The ads do sometimes read like a medicine man's pitch:

"It's a very simple idea."

"You can see the action in a few seconds."

"It is thoroughly tested."

"Start your car on the road to the best performance you ever had."

"Offered on a money-back guarantee and no time limit."

The amazing thing is that users of this \$4.95 product have nothing but praise for it. Testimonials read like fan letters to Pat Boone. And though many chemists, engineers, and oil industry technicians say that a drain plug with so little magnesium cannot do what's claimed for it, no-one has yet proved that it does not.

THE ENTIRE PREMISE on which Johns has built his fantastic business is that an engine would remain in its original condition if it weren't for wear. Wear, according to Johns, is caused mostly by the formation of sulphurous and other acids in the engine oil. Quoting directly from his literature, "When fuel is burned, tiny amounts of sulphur blow by the piston rings into the engine oil. The water moisture in the oil combines with the sulphur to form sulphuric acids in measurable quantities. These acids will then attack cylinder walls, pistons and bearings."

Johns' claim is that test results have shown that an alkaline agent would neutralize the acids and inhibit sludge and carbon formation. Since the time he developed this "wonder" plug, he has had what seems to him positive verification of his own claims that "this magnesium alloy (1) effectively neutralizes corrosive engine acids (2) greatly

inhibits the formation of sludges, gums and resins, and (3) destroys catalysts that cause oil breakdown products which foul spark plugs and cause pre-ignition and internal shorting."

On the subject of wear, engineers point out that all wear does not come from acid or corrosion; it comes additionally from abrasion (dust and metal particles) and from erosion (mainly due to lack of oil on the top piston ring when first starting the engine). These points, the detractors say, are not brought out by Johns. On this Johns rears up and says, "In evaluating the effects of acid for corrosion wear, as opposed to friction wear, there is extreme difficulty in separating the two since the products of corrosion are so highly abrasive themselves. The iron oxide formed is admittedly in minute crystals but nonetheless hard and sharp. When they break loose they naturally tear metal with them and continue to do so until their own edges are rounded or until they are flushed away."

A recent, and continuing, study by a research institute agrees with Johns' basic precept: "Magnesium will react with most organic acids at room or elevated temperatures to form oil-soluble magnesium salts. This neutralization effectively ties up the organic acids and prevents them from polymerizing with other molecules, thus reducing sludge formation tendencies." The report also states, "It is probable that when magnesium metal reacts with the organic acids present in the oil, the compounds formed serve as oxidation inhibitors for the main oil body." Seemingly substantiating his claim that the Magna-Power does not wear out, the report continues, "It is conceivable that as these antioxidants are spent during storage they will replenish themselves by further magnesium-acid neutralization." The only fly in this metallic ointment are those words "during storage." As yet the tests have been limited to the effect of magnesium anodes on the properties of stored petroleum products. Johns, however, points out that with the average car running probably less than one hour per day, the oil is "in storage" about 96 per cent of the time.

ENGINEERS WHO HAVE SEEN the report state that car owners would be concerned with both gasoline and oil storage problems. "In addition to the normal deterioration of oil," they state, "products of combustion find their way into the lubricating oil and contribute to acid and sludge formation." They further contend that magnesium is essentially inert. Johns, however, claims that present lab tests show that it is quite active under the conditions of moisture, contaminating gases, and heat—all found in internal combustion engines.

And so, even while the jury is still out, and with many critics stoutly claiming that testimonials (unsolicited or not) are not to be considered, can one million motorists (present Magna-Power drain plug users) be wrong?

/MT

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FOUR IMPORTED WAGONS

continued from page 49

wife learned a lot about cooking over campfires, the youngsters absorbed (and brought home) tons of nature lore, and I learned a great many things about the Karavan.

Having spent considerable time on the desert, I was leery about some of the side roads the "clan" picked for us to navigate. Much to my surprise and delight, the front-wheel drive of the DKW clawed its way through sand like a trench-digger. More, much more... built into the Karavan are an icebox, sink, butane two-burner stove, silverware drawers, a serving table which slides into the paneling, storage shelves (with doors) for food and kitchenware, clothes closet, a huge linen storage trunk with a foam rubber couch on top which opens into a double foam rubber bed, a sunroof (cook can stand at the stove), interior lighting, window curtains that snap closed for privacy, and a collapsible tent which fastens to the rear of the DKW.

"Gas hog?" For 308 miles of stop-and-go

traffic, I averaged from 16.9 to 22.2 miles to the gallon; 581 miles of highway cruising averaged 20.2 to 26.1 miles to the gallon.

Loaded for the trip, the van weighed close to 3500 pounds. With this weight it did some huffing and puffing going up the hills, but on the "level" it cruised between 55 (rated top speed) and 70 miles per hour. In the acceleration tests it went from zero to the quarter-mile in 27.6 seconds—not too bad for a demonstrator with 21,928 miles on the odometer!

Power for the Karavan is furnished by a strange-looking three-cylinder, two-cycle engine developing 45 bhp. The roughness of the two-stroker transmits vibration when idling, and when accelerating in first gear; at speed, however, the little mill purrs along as smooth as silk.

So here is our fourth "gapper," and it certainly fills the needs of most sportsmen. There's only one thing wrong—the Karavans are on short order, and locating one for sale will probably turn out like a treasure hunt!

/MT

PERFORMANCE and SPECIFICATIONS

Hillman Husky

ACCELERATION
From Standing Start
0-45 mph 12.9 0-60 mph 25.0
Quarter-mile 23.5 and 59 mph
Passing Speeds
30-50 mph 9.4, 45-60 mph 11.7

CRUISING SPEEDS
Maintains constant speed of 50-60 mph easily,
higher where legal.

TOP SPEED
74 mph

FUEL CONSUMPTION
Stop-and-Go Driving: 22-26 mpg for 266 miles
Highway Driving: 24-27 mpg for 144 miles
Overall Average: 25.6 mpg for 410 miles
Fuel Used: Mobilgas Special

BRAKING
Withstood 19 slowdowns from 60 mph to 20 mph,
plus one "panic" stop from 60 mph. Produced
odor, slight fade, no swerve.

SPECIFICATIONS

ENGINE: 4-cyl. ohv. Bore 3.8 in. Stroke 3.0 in. Stroke/bore ratio 1.00:1. Compression ratio 8.0:1. Displacement 85 cu. in. Develops 46 bhp @ 4400 rpm. Torque 71 lbs.-ft. @ 2000 rpm.

TRANSMISSION: 4-speed floor-mounted shift; gear ratios 3.56:1, 2.47:1, 1.48:1, 1.0:1.

CHASSIS: Unitized body. Front suspension—coil springs and wishbones; rear—semi-elliptic springs; double-action shocks all around. 5.00 x 15 tires. Berman worm and nut steering, with 31½-in. turning circle, 2½ turns lock-to-lock. Locked hydraulic brakes, 2 leading-shoe with 92-sq.-in. lining area.

DIMENSIONS: Wheelbase 86.0 in., overall length 149.5, overall width 60.5, overall height 62.0, min. clearance 6.5, front tread 48.0, rear 48.5. Curb weight 2190 lbs. Load capacity 600 lbs.

PRICE (port of entry): \$1639.

58 MOTOR TREND/SEPTEMBER 1958

Triumph Estate Wagon

ACCELERATION
From Standing Start
0-45 mph 14.2 0-60 mph 30.5
Quarter-mile 24.0 and 55.9 mph
Passing Speeds
30-50 mph 9.0, 45-60 mph 14.9

CRUISING SPEEDS
Maintains constant speed of 55-60 mph easily.

TOP SPEED
73 mph

FUEL CONSUMPTION
Stop-and-Go Driving: 27.7-32.5 mpg for 367 miles
Highway Driving: 29.6-38.7 mpg for 181 miles
Overall Average: 30.2 mpg for 548 miles
Fuel used: Mobilgas Special

BRAKING
Withstood 19 slowdowns from 60 mph to 20 mph,
plus one "panic" stop from 60 mph. Produced
odor, slight fade, no swerve.

SPECIFICATIONS

ENGINE: 4-cyl. ohv. Bore 2.48 in. Stroke 2.99 in. Stroke/bore ratio 1.20:1. Compression ratio 8.0:1. Displacement 57.8 cu. in. Develops 46 bhp @ 5000 rpm. Torque 50 lbs.-ft. @ 2700 rpm.

TRANSMISSION: 4-speed floor-mounted shift, top 3 synchro. Overall ratios 19.5:1, 11.2:1, 6.62:1, 4.55:1.

CHASSIS: Unitized body. Front suspension—coil and wishbone; rear—semi-elliptic springs; tubular shocks all around. 5.60 x 13 tires. Drum brakes with 60-sq.-in. lining area. 32-in. turning circle, 2½ turns lock-to-lock.

DIMENSIONS: Wheelbase 84.8 in., overall length 144.8, overall width 60.0, overall height 59.0, min. clearance 6.5, front tread 48.5, rear 48.5. Curb weight 1810 lbs.

PRICE (port of entry): \$1089.

Borgward Isabella Combi

ACCELERATION

From Standing Start
0-45 mph 12.0 0-60 mph 22.6
Quarter-mile 22.9 and 60.7 mph
Passing Speeds
30-50 mph 9.1, 45-60 mph 10.2

CRUISING SPEEDS

Maintains constant speed of 50-60 mph easily, higher where legal.

TOP SPEED

86 mph

FUEL CONSUMPTION

Stop-and-Go Driving: 20.4-20.5 mpg for 332 miles
Highway Driving: 25.8-31.4 mpg for 228 miles
Overall Average: 23.2 mpg for 560 miles
Fuel used: Mobilgas Special

BRAKING

Withstood 19 slowdowns from 60 mph to 20 mph, plus one "panic" stop from 60 mph, with no swerve, no odor, no fade.

SPECIFICATIONS

ENGINE: 4-cyl. in-line. Bore 2.95 in. Stroke 3.32 in. Stroke/bore ratio 1.12:1. Compression ratio 7.0:1. Displacement 91 cu. in. Develops 66 bhp @ 4700 rpm.

TRANSMISSION: Single-plate dry clutch. 4-speed column shift, all synchro. Gear ratios 3.36:1, 2.15:1, 1.36:1, 1.0:1.

CHASSIS: Unitized. Front suspension—dependent with coils and telescopic shocks; rear—coils and swing axle with telescopic shocks. 5.90 x 13 tires. Hydraulic drum brakes. 36-ft. turning circle.

DIMENSIONS: Wheelbase 102.5 in., overall length 173.0, overall width 67.2, overall height 58.0, min. clearance 6.8, front tread 52.6, rear 53.6. Curb weight 2540 lbs. Payload 1144 lbs.

PRICE (port of entry): \$2835.

DKW Karavan

ACCELERATION

From Standing Start
0-30 mph 10.0 0-45 mph 21.7
Quarter-mile 27.6 and 49.5 mph
Passing Speeds
30-50 mph 20.4

CRUISING SPEEDS

Maintains constant speed of 50-60 mph easily.

TOP SPEED

Rated at 55 mph top, will hold 70 mph on open highway.

FUEL CONSUMPTION

Stop-and-Go Driving: 16.9-22.2 mpg for 308 miles
Highway Driving: 20.2-26.1 mpg for 581 miles, plus 5½ quarts of oil
Overall Average: 21.6 mpg for 889 miles
Fuel used: Mobilgas Special

BRAKING

Withstood 17 slowdowns from 60 mph to 20 mph before slight fade appeared.

SPECIFICATIONS

ENGINE: Valveless DKW 3-cyl. 2-stroke. Bore 2.80 in. Stroke 2.95 in. Stroke/bore ratio 1.05:1. Compression ratio 7.0:1. Displacement 34.7 cu. in. Develops 45 bhp @ 4000 rpm. Torque 54.2 lbs.-ft. @ 2600 rpm.

TRANSMISSION: Single-plate dry clutch. 4-speed column shift, synchro on top 3 gears. Front-wheel drive. Overall ratios 24.2:1, 14.5:1, 8.45:1, 5.78:1.

CHASSIS: Box-section with 2 longitudinal and 4 transverse members. Front suspension—transverse springs with wishbones; rear—torsion springs with radius arms. Double-action shocks all around. Hydraulic brakes with 11-in. drums. 6.00 x 16 tires. 44-ft. turning circle.

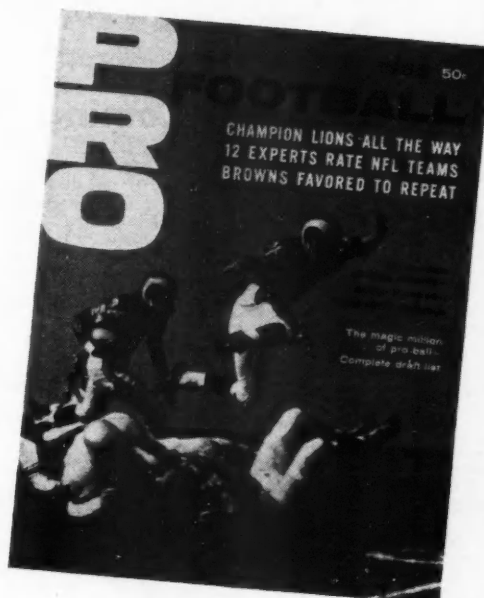
DIMENSIONS: Wheelbase 100.0 in., overall length 164.8, overall width 66.0, overall height 75.0, front tread 52.0, rear 55.0. Curb weight 2500 lbs. Total permissible weight 4365 lbs.

PRICE (port of entry): \$3000.

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WAGONCOUPES

The Coming Thing in Wagons?



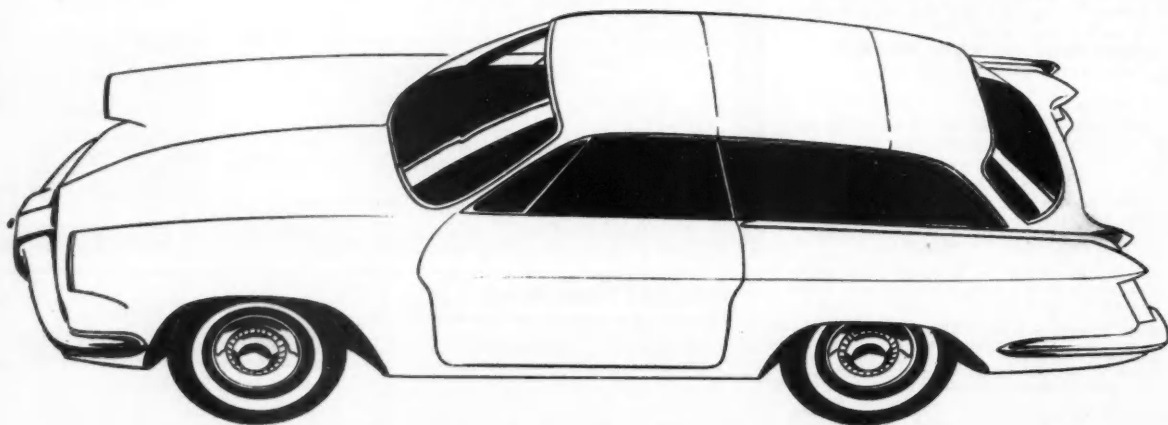
UNIQUE but practical styling of 83-inch-wheelbase, 100-hp, front-wheel-drive wagoncoupe with equal front-rear overhang makes smartly compact personal car. Driver is center-positioned.

Text and Illustrations
by Bob Cumberland
and Stan Mott

THE LAST TEN YEARS have seen some radical changes in the types of bodies offered by the American car makers. Some of the less popular styles like the three-passenger coupe have disappeared entirely, without replacement. Others, like the club coupe have evolved into something entirely different—in this case, the two-door hardtop coupe. Still others have kept the same general form,

but have completely changed character. The once truck-like station wagon has undergone a startling metamorphosis, and is now the darling of the country club set, possessing far more appearance than utility.

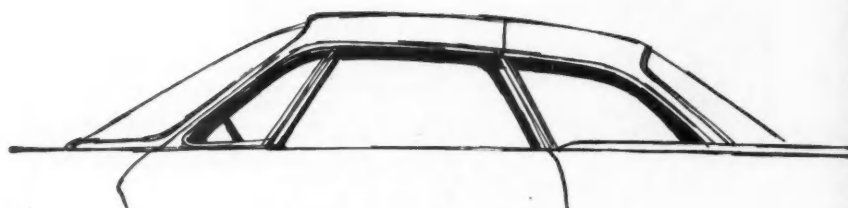
With all this development, however, there has been almost nothing done to design and develop cars which are easier and better to use. We are faced with a



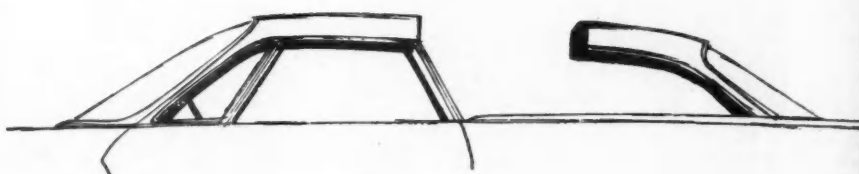
MORE CONVENTIONAL than other wagoncoupes shown, this 100-inch-wheelbase, sliding-roofed version could readily be adapted to existing production-line cars.



CONVERSION TO WAGON is simple. Release safety catch and press button for six passengers plus package space. Rear seat folds for additional stowage.



1 **UNIQUE WAGONCOUPE** begins as handsome coupe with a comfortable occasional rear seat. Car could qualify as sportscar.



2 **REAR PORTION** of upper structure slides back along convenient tracks. Operation might be power assisted or hand operated.



3 **PART OF REAR DECK** swings up to complete a station wagon roof and uncover a third seat or large area for an enclosed load.

wide choice in powerplants, in transmission systems, even in paint jobs, but all these variants are supplied in only four or five body styles, for all makes of cars. The man who drives to work alone every day is forced to drive a car which is intended for six people, or to buy something made in another country. The woman who wants to carry a lot of children to school in the morning is often forced to drive a bulky wagon the rest of the time too, and finds it difficult to park and maneuver. There never has been and never will be a car with *all* the characteristics that everyone would like to have, but the multi-purpose cars shown here (as opposed to the *general* purpose cars made by all manufacturers today) come closer to doing more than one job well than most cars can.

Combining the functions of several cars in one, without undue compromise in favor of any of them, these *wagon-coupes* are designed to fit into the daily pattern of living in today's world. Whether you consider them coupes which can double as station wagons, or as wagons convertible to coupes, you can probably see—if you are at all like thousands of other Americans—a use for one of them yourself.

/MT

PICTORIAL

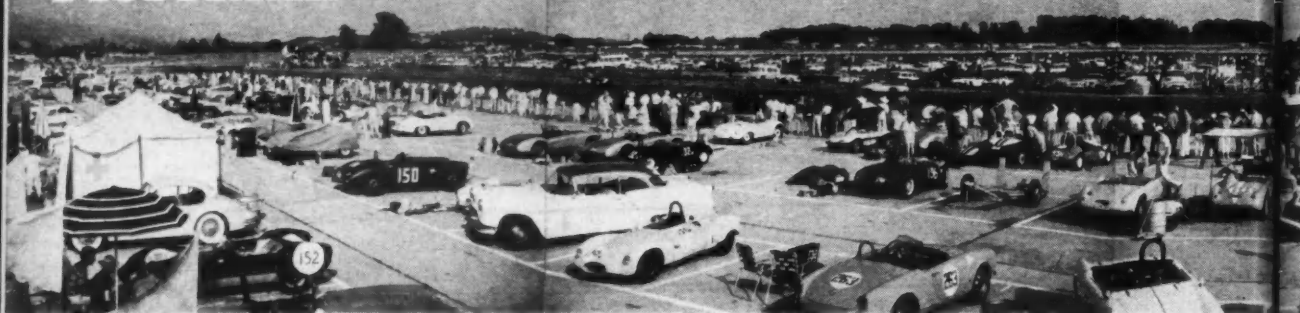


photo contest

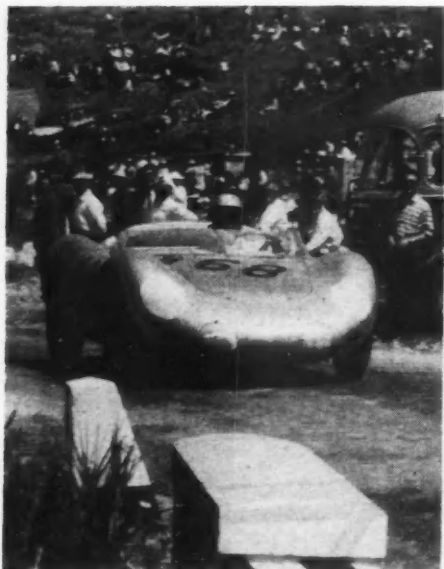
THE EDITORS OF MOTOR TREND are looking for the three best photos or sequences of photos taken each month in the field of motor sports. And this includes all forms of motorized racing on land or water—anything that is exciting and pictorial. Picture quality, good composition, current news value and photos that tell a story are what we want.

First prize is \$25, second \$15 and third award is \$10. If we select a picture sequence, we will pay the place award for the first photo plus \$7.50 for

each additional photograph published in the series.

Please identify all photos with names, dates, locations and pertinent caption data. Contest is open to amateurs and professionals alike. Photos should be black and white glossy prints, four by five inches minimum size. Please do not send negatives. Photos cannot be returned.

Send all entries to MOTOR TREND, Motor Sports Pictorial Contest, 5959 Hollywood Blvd., Los Angeles 28, Calif.



GUICHARD—AUTOMOBILE YEAR

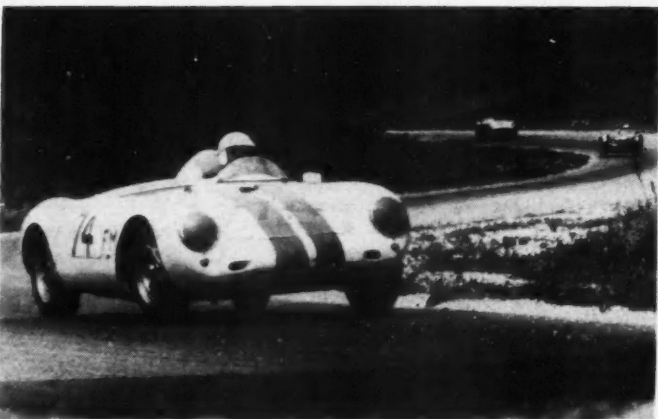
ABOVE: Giorgio Scarlatti, in a factory RSK Porsche, co-drove with Jean Behra to a remarkable overall second in the rugged Sicilian Targa Florio in June, beaten only by a three-liter Ferrari. Crowd control is nil around the narrow, poorly-surfaced 45-mile open road course which passes through two crowded villages during each of the 14 laps of the dangerous event.

RIGHT: Elkhart Lake in June saw Don Sessler in Cyrus Fulton's Porsche RS win an 80-mile event for Class E, F and G modified cars. Main event was won by Walt Hansgen with Ed Crawford second—in Lister-Jags.



GUICHARD—AUTOMOBILE YEAR

FRIENDS SURROUND LUIGI MUSSO prior to his win with Gendebien in the Ferrari at the Targa Florio. Barely one month later, Musso was killed at Reims when his Ferrari left the road in the Grand Prix of France, an event he won in 1957.



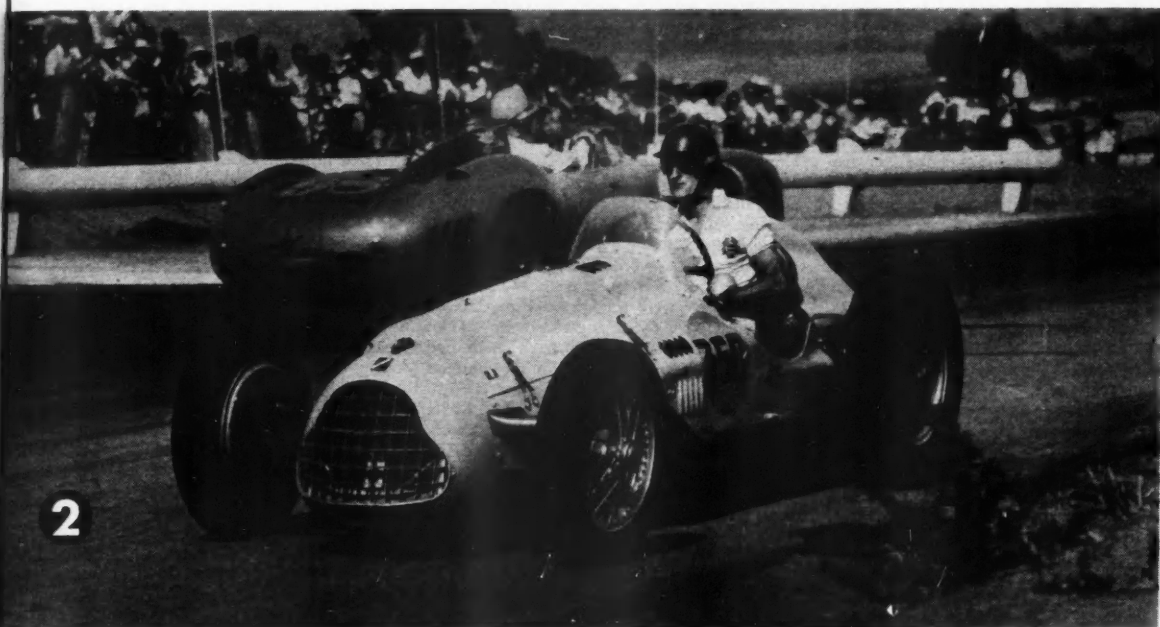
GEORGE ABRAMAN



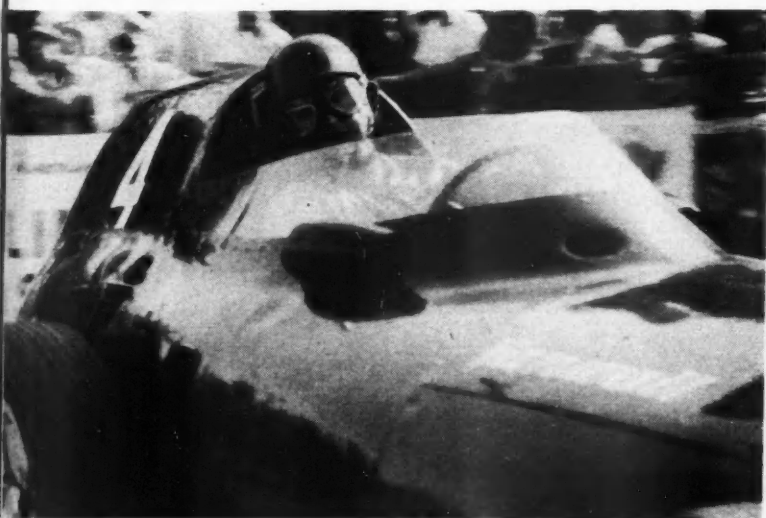
REMARKABLE 180-DEGREE PANORAMA shot of the pit activities during the Santa Barbara Road Races on May 31 wins first prize award for

Marvin Lyons. Full length of the pit straightaway and much of the back straight is visible with turn nine at left and turn one far right.

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ABOVE: Racing can be a two-way street at times. During a June event sponsored by the California Sports Car Club at the Riverside International Motor Raceway, photographer Pat Brollier's second prize photo catches Ken Miles in No. 350 Talbot serenely headed the wrong way after a spin. Pete Woods in a 4.5-liter Maserati meets the problem safely on tricky turn six. Seconds later Miles righted himself in the ex-Grand Prix, now Formula Libre, car. Bob Oker in Aston-Martin won.

3

LEFT: Tony Brooks, cornering a Vanwall in the Grand Prix of Europe in June at Spa-Francorchamps, seems more interested in Günther Molter snapping this month's third prize winning photo than in his driving technique. Observers termed this 'the greatest race of his life.' He won the hotly contested event against an aggressive Ferrari team at an average speed of 129.93 mph—the fastest road race ever run on the European Continent.

Le Mans

First American win in 37 years scored amidst rain and crashes

BELGIAN CHAMPION Olivier Gendebien and American Phil Hill scored a popular win in a V-12 Ferrari at Le Mans, the first time an American or a Belgian driver had figured among the winners. The triumph of the Italian car industry was completed by a win in the Performance Handicap, carried off after a fine drive on a little 750cc Osca by Argentine de Tomaso and Britain's Colin Davis, son of Sammy Davis, the famous journalist who won the race outright in 1927.

It was the wettest race ever, and skids and mechanical failures eliminated a large part of the entry, robbing the closing hours of any dramatic interest.

For the 24 hours, cylinder capacity was limited to three liters and the proposed regulations on minimum turning circles and ground clearance had been abandoned in order to restore the event's status in the World Championship. Aston-Martins dominated the practice performances but Cliff Allison recorded a brilliant 4 min. 12.7 sec. lap in the Lotus, which had only the 1960cc engine in place of the hoped-for 2.2-liter. The 750 Lotus had bearing trouble on its new short-stroke engine, and the long-stroke engine which won the Performance Index last year was hastily substituted. Jaguars and Listers had three-liter engines prepared for them by Jaguar, giving 250 horsepower. Some

thought they could improve on the official carburetor tuning—a costly mistake as it turned out. The 1.6-liter Porsche was obviously very fast in the hands of Behra and Herrmann. The Peerless, with Fiberglas coupe body and Triumph TR-3 engine, looked businesslike, and A.C. had a new experimental car with space frame and coil spring suspension. Panhards were using a new twin-cylinder engine with twin overhead camshafts but the D.B.s were relying on new pushrod valve gear with wider angle between valves.

The 750cc Stanguellinis from Italy had front suspension by rubber in tension and the Oscas were basically the same as 750 models seen at Sebring, the Laroche-Radix car having carefully streamlined bodywork which obviously owed a lot to Lotus. The 750cc V.P. with Renault engine in front of the rear axle had a front like a Lotus and a cropped rear end like a Cooper. The Tojeiro 1100 had a space frame, Coventry Climax engine and rear-mounted Volkswagen gearbox; there were two lightweight Alfa Giulietta coupes with Zagato bodies. Among the Porsche RS roadsters was a 1500cc car with the new low-pivot swing axle and coil spring rear suspension driven by Barth and Frère. The Ferraris were mostly Testa Rossa three-liters with V-12 engines, the works cars having de Dion axles.

Grandstands and public enclosures were packed with spectators as the cars lined up for the start under a sultry sun but the weather forecast was gloomy and distant dark clouds threatened rain before nightfall.

MOSS WAS FIRST AWAY as usual when the flag dropped, and impudently looked around to see who might be following him as his Aston-Martin sped away towards the Dunlop Bridge. At the end of the first lap the Aston came snarling past the pits alone with a clear five-second lead over Hawthorn's Ferrari; Brooks (Aston) was third, and Trips' Ferrari fourth, followed by Salvadori (Aston) and Gendebien (Ferrari). At the end of three laps Moss had a 12-second lead and was lapping the tail-enders. Lotus hopes suffered an early blow when Allison stopped at the pits, eventually to retire with gasket trouble. Martin's Maserati broke its transmission on the descent to the Esses. Then in quick order the Ecurie Ecosse Jaguars of Sanderson and Fairman pulled in to the pits to retire with burned pistons, caused by too weak a mixture.

Moss, striving to build up his lead, went broadside against the sandbank, but he recovered brilliantly and kept his lead. He had 1½ minutes in hand, but the pace was too hot to last and he coasted down to Mulsanne with a broken con rod.

The rain was lashing down now and spectators scurried for shelter as the first cars came in for fuel and a change of drivers.

Hamilton (for Bueb), who is at his best in the rain, set out in terrific pursuit of the leaders, his Jaguar half lost in the flying spray and he pulled the Jaguar up to third place. Other drivers were not so happy; visibility was almost nil in places, cockpits became flooded, treacherous pools of water formed on the corners and streams of mud and water flowed across the track.

by Gordon Wilkins

STORMIN' UP THE HILL

THE 36TH ANNUAL Pikes Peak Auto Hill Climb was faster than ever this year, primarily because the 12.42-mile dirt course, which winds from 9402 feet to 14,110 feet altitude, was in better condition.

Winner in the Championship Car Class was Bobby Unser, shown here power sliding his Jaguar-powered special. His time was a record 13:47.9. Stock car honors went to Nick Sanborn Jr., in a Pontiac. Sanborn, who lives virtually at the bottom of the peak, posted a 15:49.7. Fastest sportscar was Ak Miller in the Corvette-powered *Hot Rod Magazine* Special, turning 15:23.7.

Next year, USAC plans are for a two-day event, with July 4th for Stock and Championship cars, following day for sportscars. /MT



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PHOTO BY BOB D'OLIVO

Soon Collins made a long stop at the pits with clutch trouble which eventually put his Ferrari out of the race and Phil Hill, driving brilliantly in appalling conditions, found himself leading the race long before he had hoped to. Hamilton stormed past an ill-at-ease Trintignant to take third place behind Seidel. Lewis-Evans lost his Aston as he took the dangerous corner under the Dunlop Bridge at 100-plus and completed an incredible number of spins during which the front end was so badly smashed that he had to retire. The Belgian Lister-Jaguar had retired and the Ferrari driven by Pedro Rodriguez and Jose Behra was withdrawn with radiator trouble. The Porsches were wonderfully stable in the wet and the Behra-Herrmann car moved up to sixth place.

AFTER FOUR HOURS the rain had abated but the course was terribly slippery. It was Ferrari (Gendebien-Hill), Ferrari (von Trips-Seidel), Jaguar (Hamilton-Bueb). "Mary" (really a French businessman named Brousseau) lost control of his Jaguar at the Dunlop Bridge. The car gouged a great gap in the earth retaining wall and bounced back to scatter shattered wreckage across the track, while the driver's inert body lay alongside it. Duncan Hamilton saw a spectator throw his cap onto the track, and puzzled by the gesture, slowed enough to scrape through, but Kessler struck the wreckage. His Ferrari tore another great hole in the earth bank, caromed off, shedding its front end, radiator and starter before swinging back and throwing out the driver. Kessler crawled to the side where he was lifted out of danger and gendarmes pushed his Ferrari clear of the passing cars a few seconds before it burst into flames. Brousseau was killed outright but Kessler escaped with thoracic contusions and chest bruising.

As the lights of the fairground, the restaurants and the snack bars blazed among the trees the rain came down again and Bueb (Jaguar) moved up to challenge Gendebien for the lead, gaining as much as 10 seconds a lap on the Ferrari. Eventually he got past, but Hill fought back and these two traded places only seconds apart after eight hours.

Twenty out of the 55 starters were now out of the race, among them von Frankenburg's Porsche, Chamberlain's Lotus, and Picard's Ferrari. More were to follow. Seidel ditched the Ferrari avoiding another car and

the Tojeiro which had gone very well dropped out with axle trouble. The Jaguar had had a lead of nearly 1½ minutes but when Hamilton took over again he found it terribly difficult to maintain the cruising speed in the spray and the darkness, and the Ferrari moved ahead again. Behra was leading the two-liter class, the Barth-Frère Porsche led the 1½-liter. The Ireland-Taylor Lotus was only survivor in 1100 class.

As the late night revellers queued up to see the "savage Jivaros, head hunters who drink blood and eat raw flesh," the Hawaiian strip-tease, or Queen of the Vipers with her tame snakes, the loudspeakers announced another crash at the Esses and the driver walked disconsolately back from the wreck of the Bruwaen-Lafourel Panhard. Grimly the drivers kept up the interminable round, the Porsche drivers in particular feeling the cold, while the spectators were sheltered from the chill night air in the Moulin Rouge dance hall, or packed in to watch the boxing and wrestling. And as the early morning light returned, the more devout went to 6 A.M. Mass. Le Mans has something for everyone.

As dawn broke the Ferrari was steadily consolidating its lead but the fight between Osca and D.B. for the Performance Index was intense and the result was far from decided.

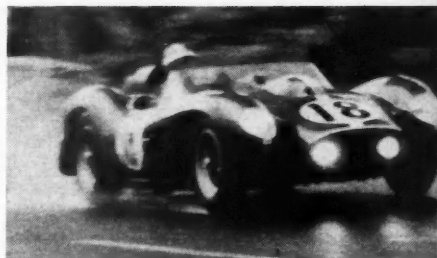
AFTER 12 HOURS OF RACING it was Ferrari, Jaguar, Aston, Porsche, Aston, and Lister-Jaguar—in that order.

Fate struck at Behra in a most baffling way. His left front brake stuck every time he used it and remained on until the lining wore away to give clearance. Eventually he had to stop with no lining left, so new shoes were fitted. The Whitehead Aston-Martin had meanwhile moved into fourth place, but Behra, driving with terrific determination, snatched back one minute in five laps and caught the Aston, only to stop again with the same trouble. This time both shoes and drum were changed, but again the brake stuck and again it wore out. Only later was it found that the pistons were sticking in the operating cylinder. Behra refused to bother with it. He practically gave up using the brakes and concentrated on holding his place behind the Whitehead Aston.

As the more comfort-loving spectators began drifting back to the circuit after their

night's rest it became clear that the Jaguar's chances of victory were dwindling. Hamilton was doing his best but was suffering fuel starvation towards the end of the long straight, because one of his fuel pumps was out of action. And the 1100 Lotus, which had only to finish to win its class, dropped out with distributor drive trouble.

A CLEAR SKY AT DAWN had raised hopes of a fine Sunday, but soon the rain was lashing down again and when Hamilton took over from Bueb, Phil Hill was within striking distance of lapping the Jaguar for the second time. For a time they kept their places, Hill keeping his lights on to let Hamilton know he was there. Then as he accelerated away from Arnage, over a humped bend, Hamilton ran into a squall of hail and saw a small car with its brakes on in front of him. He tried to avoid it but the Jaguar left



RACING IN RAIN is hazardous as Bruce Kessler learned. Shortly after this photo he crashed and burned Ferrari.

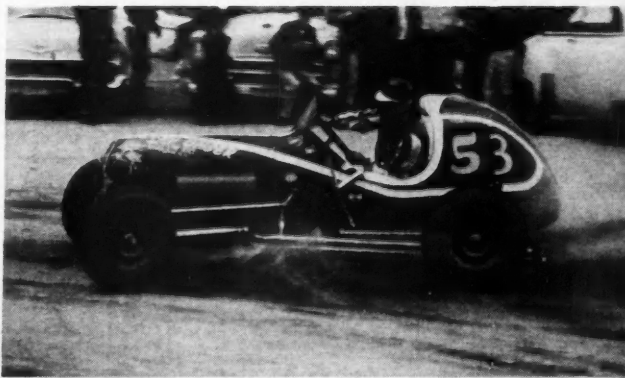
the road, somersaulted and was wrecked, while Hill flashed past hoping the skidding car would miss him. Hamilton was thrown out and taken to the hospital with superficial injuries—a very lucky escape. From then on the race lacked any interest. No one could challenge the Ferrari and the Whiteheads circulated securely in second place, laps behind.

So the race dragged on. The Americans Hugus and Erikson, after a regular run, had moved into seventh place in their Ferrari. The two A.C.s and the Peerless were still going well, although the experimental and completely untried A.C. had a cracked chassis frame and the Lister-Jaguar was still circulating in top gear. The hands of the clock

continued on page 67



PHOTO BY BOB D'OLIVO



UNKNOWN WINS GP

continued from page 34

trials which preceded them. Austin had J.T.C. Moore-Brabazon (now Lord Brabazon), who had won the Circuit of the Ardennes in 1907, and Dario Resta, a dashing Italian newcomer; Benz had Hemery, Hanriot and Erle, while Mercedes had veteran Otto Salzer, Willy Poege, a popular German gentleman driver, and a new man, Christian Lautenschlager.

In 1908—as today—a young man with money could buy fast cars and build himself a reputation which would win him a place on the works teams, but for those without private means the way was slow. Lautenschlager was already 31 years old when he got his first big chance in the 1908 Grand Prix. He was a typical stocky Swabian with the calm, calculating temperament of his race. In 1899, after completing the "Wanderyears" which every young craftsman did, he was hired by the Daimler-Motoren-Gesellschaft of Stuttgart and soon rose to be a "Fahrmeister," delivering cars to customers, teaching new owners how to drive and eventually testing new cars. But he was determined to be a racing driver and his first step on the road came when he was tried out as riding mechanic to Otto Salzer, one of the factory drivers, in 1906.

It was a hard, dangerous job, clinging precariously to a tiny seat on a bare chassis as the car bucked and slid on the turns, watching the gauges, dodging the hail of stones flung up by the cars in front and slaving away with bleeding knuckles to change the tires which were torn to ribbons by the rough roads. The danger didn't worry young Lautenschlager and he had the physical strength to make light of the hardships.

Two years later his big chance came when he was nominated as one of the three team drivers for the Grand Prix. He worked hard to perfect his driving technique while storing away every fragment of information he could pick up from old hands like Salzer and Poege.

SINCE JENATZY'S WIN in the 1903 Gordon Bennett event, Mercedes had not had much success in racing but for the 1908 race they had cars of outstanding promise, the first to be designed by Paul Daimler, son of the company's founder, newly installed as technical director. Their four-cylinder engines with inlet valves in the heads and exhaust valves at the side were reputed to give 130 horsepower at 1400 rpm. Their roadholding was far better than on any of the previous cars.

Morale of the Mercedes team was high as they drove their new cars through Southern Germany and across France to Dieppe. They had a series of private races between themselves on the way and were stopped for speeding several times as a result.

Dieppe was the rendezvous for high society from all over Europe and the town was packed as race day drew near. Normally there were days of practice which gave pointers to the relative performances of cars and drivers, but this time practice in race cars was forbidden for fear of breaking up the road surface. The drivers had to be content with learning the course on touring cars, while spectators speculated on the performances of

the new race cars. The French were full of confidence, especially as it was believed that their Clement Bayards and Richard Brasiers had the heels of the opposition on pure speed. If anyone gave a thought to the chances of Mercedes there were few indeed who gave much for the chances of their new recruit, except for the recruit himself. Lautenschlager was determined to win and was already spending the prize money in his imagination. He knew exactly what he wanted; he wanted to own a little house of his own in the hills above Stuttgart.

THE CARS STARTED on their 477-mile 10-lap grind at minute intervals and the first man was due away at 6 A.M., so by 5 in the morning of race day thousands of spectators were making their way out onto the circuit in cars, carriages, on bicycles and on foot. The day dawned gray and chilly but military bands and flags brightened the scene as a regiment of infantry and one of cavalry took up their positions to guard the circuit. By 6 A.M.—when a cannon fired to send off the first man, young Dario Resta, on his green Austin—the sun was beginning to shine. A minute later Willy Poege thundered away in his white Mercedes and so the long line moved forward to the starting point: Duray, Sziz, Hemery, Fritz Opel and the rest.

Grandstand and pits were built near the sharp corner on the outskirts of the town which formed the apex of the triangular course. The cars sped out of town between the palisades built to control the spectators, shooting under the temporary wooden footbridges onto a long straight with a dip in the middle which terminated in a winding descent to an S-bend under a railway bridge, after which the road rose again, undulating across country to the next turn at Evermeu. From there came more undulating country for nearly nine miles to the tricky S-bend at Londinières and on to the fast descent into Sept Meules. The road led into the woods now, winding and twisting to emerge on the five-mile straight leading into the third main turn at Eu. Here the drivers changed down for the sharp climbing turn on the road to Criel, after which they plunged into the woods again before coming out onto the 15-mile straight where engines roared and driving chains sang as they worked up to full speed on the long run back to Dieppe.

Remember that these were high-built, temperamental cars, running on flimsy tires which might burst at any moment; they had brakes on the rear wheels only and it was all too easy to slide out of control on the loose surface. Yet the fastest of them were doing over 110 mph on the downhill straights!

The tail-enders were still waiting to start as the first cars came through to begin their second lap and there were some rude shocks as the watches began clicking. Hopes of a French triumph were jolted when Salzer's white Mercedes came through after 36 min. 31 sec., making a record lap at 78.59 mph which stood unbeaten throughout the race. Bablot clocked 36 min. 46 sec., Sziz did 37 min. 6 sec. and no-one paid much attention to the Mercedes freshman who clocked 38 min. 29 sec.

THE RETIREMENTS were beginning and big names were dropping out. Lancia stopped at the pits, took one look and withdrew. Next time around, Sziz pulled in with one rear wheel wrecked; tire and rim had disappeared. There was no complete spare wheel available, so he too had to retire. The good done by forbidding practice on the circuit had been undone by holding a voiturette race the day before and it was soon obvious that the surface was breaking up fast. Most cars had detachable rims, some held by eight bolts and some of a later type developed by Michelin secured by a single bolt. The new ones caused trouble and car crews sweated and cursed as they struggled with them.

Lautenschlager was now putting on the pressure. He passed 11 cars on the second lap and there was a gasp of surprise as he came past the grandstand taking the lead with an elapsed time of 1 hour 16 min. 55 sec. for the two laps against Thery's 1 hour 17 min. 7 sec. He was now ahead of Wagner (Fiat), Hanriot, Duray, Minoia, Hemery and Heath on time, and was throwing the car into corners with immense confidence. Fiat hopes were dashed when the dapper Nazzaro broke his crankshaft but Wagner was still fighting it out and on the third lap he led, with Hemery second and Lautenschlager third. At four laps, the Fiat disaster was complete when Wagner stripped a gear and Lautenschlager was again leading on elapsed time. The chase had now brought him up behind the Benz of Hanriot who had started before him and Lautenschlager prepared to pass but Hanriot blocked the way. These were the days before Mercedes and Benz combined and the two teams were still deadly rivals. Time after time the Mercedes nosed alongside attempting to pass, but every time the Benz moved over and balked it.

Lautenschlager was now in a cold fury for he knew that he could win this race if all went well and he badly wanted that house in the hills. So as he harried the Benz he got his mechanic Riecker to take a big heavy hammer out of the tool kit. Then he watched for a chance to bring the nose of the Mercedes close to the rear of the Benz. Suddenly Hanriot's mechanic was horrified to see Riecker leaning over the front of the Mercedes, holding on by the hood strap and preparing to hurl the hammer at Hanriot's head! It must have been a fearsome sight, for the Mercedes crew wore black pullovers and black helmets which covered most of their faces. The mechanic didn't hesitate. He signalled to his driver to pull over and Lautenschlager thundered by.

BUT THE RACE WAS STILL far from won. Tire trouble struck the Mercedes as it had so many other cars. Soon both Lautenschlager and Riecker had fingers blistered and bleeding from struggling with the nuts securing the rims. Michelin had provided a stock of 1200 tires for the race, but already some teams were running short. Some, whose cars had retired, sportingly gave unwanted tires to their rivals. When Lautenschlager needed more tires, Riecker made a circle with his arms above his head as they drove up to the pits so that no time would be lost.

The Clement Bayards were showing their expected speed, doing over 104 mph on the level and Rigal put in a lap at 76 mph but he was constantly delayed by tire trouble. By the sixth lap there were only 28 cars

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still running and French hopes were fading. Dust and flying stones increased the hazards as the road surface broke up; tires were torn to ribbons on the ruts and the rocks. Hemery was in pain with a cut eye suffered when a stone shattered his goggles but he pressed on at almost undiminished speed in second place.

Lautenschlager roared doggedly on in the lead, making up time after every tire change, jerking the handbrake on for a moment to flick the tail around on the sharp corners and opening up to full speed regardless of the risks on the straights. Under the blazing heat of the noonday sun he stopped at the Mercedes pit to take on the last spare tire they possessed and two laps later the band crashed out "Deutschland Uber Alles" as he came in to win at an average of 69 mph for the 10 laps, after 6 hrs. 55 min. 43 sec. of racing. He and Riecker had changed 12 tires but they forgot their exhaustion in the excitement of the victory celebrations. It was a great day for the German industry with Lautenschlager (Mercedes) first, Hemery and Hanriot (Benz) second and third, Poegge (Mercedes) fifth, Joerns (Opel) sixth and Erle (Benz) seventh. The highest placed Frenchman was Rigal who had changed no fewer than 19 tires but managed to finish fourth, a terrific feat of determination and physical endurance.

Lautenschlager's 1908 winnings were enough to buy him his house, and he survived two world wars. He soon shook hands with Hanriot and never publicly named him as the driver concerned, but he often talked about the incidents of the race over a glass of the smooth, potent red wine from the hills around Stuttgart. His home was decorated with souvenirs of his racing career and hanging on the staircase was a poster advertising the 1908 race. After he retired he took long walks, in winter and summer, among the hills. Daily gymnastics kept him in good shape even at 77 and he looked much younger, wearing a mustache somewhat smaller than the fierce-looking handlebars he wore in 1908; but he fell victim to pneumonia and died in January 1954.

Carl Joerns, sixth in the race, still lives in Wiesbaden and is now past 80. Lord Brabazon, who also finished, still lives a very active business life in London at the age of 72. But there cannot be many more who won fame in the heroic age of motor racing and can still say, "I was there." /MT

Le Mans

continued from page 65

crept around, 4 P.M. arrived, the checkered flag waved, and as the winners drove up before the grandstand to receive their laurels, the rain came down again.

RESULTS

General Classification

1. Ferrari (Gendebien-Hill), 2548.8 mi, 106.21 mph
2. Aston-Martin (Whitehead-Whitehead), 2448.7 mi, 102.03 mph
3. Porsche 1600 (Behra-Herrmann), 2429.5 mi
4. Porsche (Barth-Frère), 2421.0 mi
5. Porsche (de Beaufort-Lange), 2404.2 mi
6. Ferrari (Beurlys-de Changy), 2326.8 mi
7. Ferrari (Hugus-Erikson)
8. A.C.-Bristol (Bolton-Stoop)
9. A.C.-Bristol (Patthey-Berger)
10. Porsche (Colas-Kerguen)

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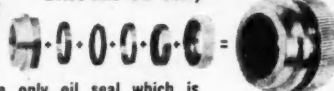
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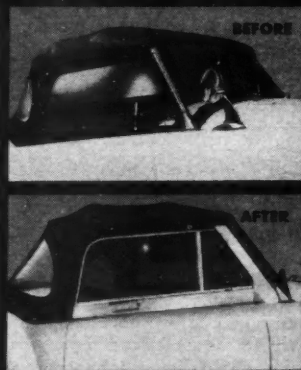
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How to Make the HOTTER One the HOTTEST

Story and Photos by Don Francisco

with modification magic your 283 Chev can become more than a match for a 34

CHEVROLET, IN THEIR '58 MODELS, brought out a 348-inch engine as an improvement over their previous 283-inch model that headed the '57 line. The 283, still available in '58 models and the standard engine for Corvettes, was an exceptional performer. The 283 is one of those rare jewels that come along once in a generation. For many years the backbone of the hot rod sport was the flathead Ford V8, and although the flathead isn't completely dead yet, the 283 is rapidly taking over its position.

The 283s are willing subjects for all the reworking procedures that have become a part of the hot rodder's art. They can be bored and stroked; reground camshafts are available for them, along with special valve lifters and heavy tension valve springs; oversize valves can be fitted to them; their valve ports and intake and exhaust passages can be enlarged; intake manifolds designed for as many as six two-throat carburetors are available; ready-made exhaust headers can be bought; special ignition distributors and Vertex magnetos are made for them; and an all-out competition engine can be fitted with a Hilborn fuel injector.

TODAY REWORKED ENGINES, regardless of their make, fall into three general categories: (1) engines to be used in passenger cars for everyday driving, (2) engines for passenger cars used during the week for normal driving and driven in competition on a dragstrip on weekends, and (3) engines rebuilt for all-out competition use.

In this article we are concerned with only the first and second categories. The idea is to show what can be done to a 283 to make the car in which it is installed more pleasant to drive, able to keep up with the '58s, and possibly ca-

pable of bringing home an occasional trophy from the dragstrip. These procedures are recommended for only engines of cars with stick-shift transmissions.

Step number one in the list of modifications for a 283 is to improve its exhaust system; two, improve its ignition system; three, raise its compression ratio; four, provide it with adequate carburetion; and five, install a reground camshaft. Optional items are boring and stroking and reworking the cylinder heads.

If the owner feels that he would like to go as deeply into his engine as required by boring and stroking, these modifications should be made first. It is common practice to bore 283 blocks $\frac{1}{8}$ -inch oversize, which gives them a cylinder bore of four inches and to stroke their crankshafts as much as half an inch. However, the installation of a half-inch shaft will require grinding notches in the lower ends of the cylinder barrels to provide clearance for the connecting rods in the opposite bank. A shaft with a $\frac{3}{8}$ -inch stroke can be installed without any modification to the block. An engine with a four-inch bore and a $3\frac{1}{2}$ -inch stroke would have a total cylinder displacement of 339 cubic inches; with a $3\frac{1}{4}$ -inch stroke displacement would be 351 inches. Extra cubic inches put a lot of life into a 283, especially at low engine speeds.

THE EXHAUST SYSTEM for a road engine should include exhaust headers and dual exhaust pipes. Many '57 Chevrolets had dual exhaust pipes as stock equipment and these may be used satisfactorily with headers. Ready-made headers of excellent design are available from most speed equipment stores and muffler shops. For a combination engine that is to be run on a dragstrip as well as on streets and highways, it would be wise to replace the

stock mufflers with a pair of straight-through glass-packed mufflers; if the drag rules permit, install a set of laces plugs ahead of the mufflers. These plugs can be opened when the car is to be driven on the dragstrip and they should account for three or four miles per hour in the quarter-mile.

THE IGNITION SYSTEM on an engine expected to run at high speeds and at high compression ratios must be capable of firing the compressed fuel and air mixture in the engine's cylinders at high speeds. This requires a good distributor and equally good coils. The best battery ignition one can get is one of the special two-coil distributors now available plus two good coils. The second best system would be a Corvette distributor and a good coil. Corvette distributors have dual breaker points and an advance curve that is ideal for reworked engines. They do not use a vacuum advance.

If you have a little more money to spend, you can replace your stock ignition with a magneto. Vertex mags are readily available and are designed to be interchangeable with the stock ignition distributor. They have fully adjustable spark advance curves that can be tailored to match the engine. Mags are generally used on competition engines, rather than road engines, but work with either.

It is absolutely essential that the stock spark plug cables be replaced with cables that have copper or stainless steel conductors. Stock cables are of the new TVRS type with a non-metallic conductor. These cables reduce radio and television interference caused by the engine's ignition system. The built-in resistance in the cables makes them undesirable for a reworked engine needing all the voltage at its spark plugs.

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A COMPRESSION RATIO of 10.5 to 1 is maximum for normal driving and drag use, and with present premium grades of gasoline. These gasolines have much higher octane ratings than they had only a few months ago. The method of raising the ratio will depend on whether the engine is to be stroked. Obtaining the desired ratio in a stroked engine is usually merely a matter of selecting the correct pistons because pistons for stroked crankshafts are available with various compression heights, making it possible to control the ratio with the pistons.

Appreciable variations in the ratio can also be effected by using cylinder heads of different types. Stock heads that provide a ratio of 8 to 1 on 265-inch engines and 8.5 to 1 on 283 engines will give the lower of the two ratios possible by changing heads; the heads that are listed at 9.25 to 1 on 265 engines and 9.5 to 1 on 283 engines will give the higher of the two ratios. By juggling heads as well as pistons, practically any ratio can be arrived at quite easily.

If the engine is not to be stroked, the compression ratio can be raised by changing cylinder heads. If this won't do the job, install special pistons with domed heads. Milling the cylinder heads isn't recommended because of the limited clearance between the valve heads and the heads of the pistons when the pistons are at top center in the cylinders on their exhaust strokes. It is possible, even in stock engines, for the valves to hit the pistons if they are floated at high engine speeds. Nearly all special pistons made for these engines have deeper than stock valve recesses in their heads to eliminate the possibility of interference at these points. Head milling also causes other undesirable things, such as throwing the intake ports out of alignment with the ports in the heads.

CARBURETION IS THE NEXT STEP.

Sufficient carburetor venturi area must be provided so the engine can breathe freely at high engine speeds. A stock four-throat carburetor would be adequate for an engine that wasn't to be turned tight, but for the best high rpm performance, dual four-throats, or three two-throats on a special manifold, would be required. Dual four-throat manifolds and carburetors are stock equipment on some Corvettes and were available on some passenger car engines. For best results stock throttle linkage for dual four-throat carburetors should be reworked to eliminate its delayed action for the rear carburetor.

If it is necessary to buy a manifold and carburetors, it would be wiser to get a three-carburetor manifold and three two-throat carburetors rather than a dual four-throat setup. Although a three-carburetor intake manifold is more expensive than a stock Chevrolet dual four-throat manifold, the two-throat carburetors are

much cheaper than the four-throats, and although the carburetors are less expensive, they are superior in performance. Two-throats are also much easier to work on than the four-throats. When three carburetors are used, they can be fitted with progressive throttle linkage that will make the car easy to drive for normal use and can be converted to a synchronized setup in a matter of minutes. Synchronized throttles might be more satisfactory for drag use.

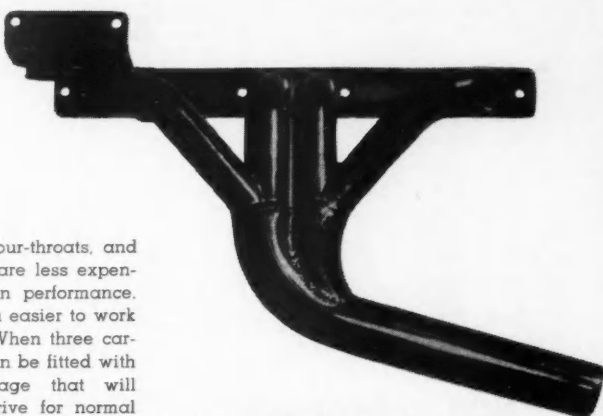
Any reworked engine fitted with dual four-throats or three two-throat carburetors should also have a Corvette six-valve fuel pump. These pumps have higher pumping capacity than a standard pump, necessary to maintain the correct fuel level in the carburetors.

THE TYPE OF REGROUND CAMSHAFT to use is something that will depend on personal choice. There are so many reground camshafts on the market—with new grinds being made available every day—that it is impossible to keep up with them. It is recommended that you tell the man from whom you buy your cam exactly what kind of performance you would like to have, and do what he tells you.

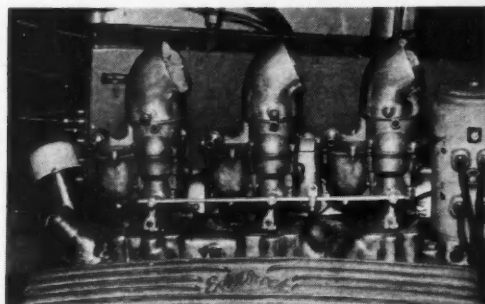
Most cam grinders will also recommend special valve lifters for use with their cams. Some grinders will guarantee their shafts only if the lifters they recommend are used with them. With some of the grinds it will be necessary to install stiffer-than-stock valve springs so the additional engine speed made possible by the cam can be used. Valve spring installation is something that must be done right and according to the instructions supplied with the springs. The tension of the springs must be great enough to make the valves and lifters follow the cam lobes but it must not be so great that it will cause undue wear of the lobes.

THE CYLINDER HEADS should be reworked if the engine was bored and stroked so that it can breathe well enough for the additional cylinder displacement. A complete head reworking job includes enlarging the intake and exhaust ports and passages, the installation of oversize intake and exhaust valves, enlarging the combustion chambers around the valve seats, and smoothing the combustion chamber surfaces.

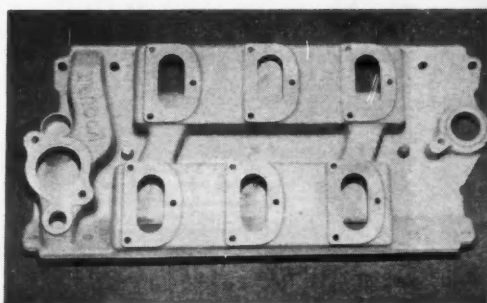
It isn't possible to enlarge the ports and passages in the heads over .050-inch on a side but this seemingly small



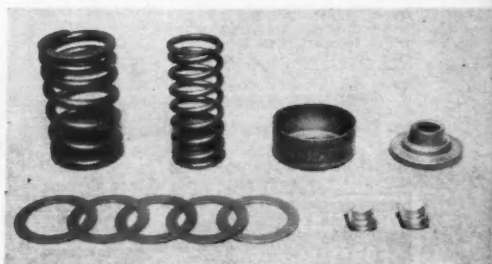
READY-MADE HEADERS are available at local equipment stores, muffler shops.



THREE CARBURETORS and manifold are for combined street-dragstrip use.



SPECIAL MANIFOLD for competition use handles six two-throat carburetors.



HEAVY TENSION dual valve springs use washers to adjust installed length.

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The HOTTEST

continued

amount makes a definite improvement. All the passages should be ground to the same dimensions and any irregularities in them removed. Have this done by an expert. If there isn't anyone in your area who has had experience porting these heads, crate them and ship them to someone who has. This might save you from buying a new head or two.

Special oversize intake and exhaust valves can be bought from speed equipment stores. The heads of the intakes should be $1\frac{7}{8}$ inches in diameter, which makes them .155-inch larger than stock. Valves of this diameter are adequate for any reworked engine. If the valves haven't been lightened, this should be done by taking a cut from the top surface of their heads—with some valves it is possible to remove additional material from the underside of their heads. Reducing the weight of the valves allows them to function at higher engine speeds without floating than they could otherwise. The angle of the face on the valves should be 30 degrees, which means that the angle of the intake seats in the cylinder heads will have to be reground to 30 degrees. This is a simple matter, however, as the stock seats will have to be ground away to enlarge the valve ports to match the new valves. A narrow seat is used and the port diameter is enlarged to the seat's smaller diameter.

Exhaust valves with $1\frac{1}{2}$ -inch-diameter heads are recommended. This is $\frac{1}{8}$ -inch larger than stock. The stock face angle of 45 degrees is retained on oversize exhausts to benefit from the better sealing action of the 45-degree angle. Exhaust valves must be of good quality to withstand the high temperatures they attain when the engine is developing maximum horsepower.

When oversize valves are installed, the combustion chambers around the valve seats must be enlarged so there will be adequate area around the valve heads for fresh fuel and air mixture to flow into the cylinders and for exhaust gases to flow out of them. The easiest way to enlarge the chambers is with large cutters which rotate on pilots that fit the valve guides, but the job can also be done with small grinding wheels. For the oversize valves described, about $\frac{1}{8}$ -inch of material should be removed from the wall next to the intake and approximately $\frac{1}{16}$ -inch from the wall next to the exhaust.

After the chambers have been enlarged, their entire surface should be ground to a reasonably smooth finish to remove any sharp edges or irregularities that might become hot when the engine is running and cause pre-ignition of the mixture being compressed in the cylinders. Care must be taken when grinding material from combustion chambers to remove the same amount from each

chamber so their capacities will still be equal when the grinding is finished.

AN ENGINE REWORKED as described, and correctly assembled and tuned, will make any car a genuine going affair if the car has the correct rear axle ratio so that the engine can wind tight enough to develop its maximum power output. Chevy V8 engines aren't luggers and they have to be turned tight to really go. For drag racing in a passenger car a 4.56 gear would be good for a healthy engine. Possibly a 4.89 would be better for one a little on the weak side. With these gears the car should turn between 100 and 105 mph at approximately 6000 engine rpm. This is in high gear. Either of these gears is too low for running on the highway, so for normal driving during the week and dragging on the weekend, 3.55 or 3.70 gears in the rear end and Corvette gears in the transmission are recommended. With either of these combinations the car could be driven anywhere and at 6000 rpm it should run 100



VALVE GUIDE pilot centers cutter used to enlarge the valve head area.

to 105 mph in second gear. High gear wouldn't be used in the quarter-mile.

To help handle the extra engine power install a set of Traction-Masters to relieve the rear chassis springs from the duty of controlling the rear axle when the full torque of the engine is on the driveshaft. Without Traction-Masters the axle housing will twist the springs out of shape and the springs will cause the rear wheels to jump up and down until the car gets going.

Gears of the correct ratio and Traction-Masters add the final touch to a car that will be at home in practically any competition. And there's one thing for sure: there isn't a stock '58 passenger car of any make that can stay close enough to it in a drag race to smell its exhaust.

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Luxury Cars

continued
from page 31

LINCOLN

ENGINE: Ohv V8. Bore 4.30 in. Stroke 3.70 in. Stroke/bore ratio 0.86:1. Compression ratio 10.5:1. Displacement 430.0 cu. in. One 4-bbl carburetor. Dual exhaust. Advertised bhp 375 @ 4800 rpm. Bhp per cu. in. 0.87. Piston speed @ max. bhp 2960 ft. per min. Max. bmep 171.5 psi. Max. torque 490 lbs.-ft. @ 3100 rpm.

TRANSMISSION: Turbo-Drive automatic, torque converter with planetary gears, lever operated; ratios 2.37:1, 1.48:1, 1.00:1.

CHASSIS: Front suspension—dependent coil springs with ball joints, long and short control arms. Rear—coil springs with trailing arms and tubular track bar. 9.50x14 tires. Steering: power, recirculating ball with parallelogram linkage, transverse drag link; 3.3 turns lock-to-lock; overall ratio 20.1:1; turning diameter 44.4 ft. Rear axle—conventional differential, ratio 2.87:1.

DIMENSIONS: Wheelbase 131.0 in., overall length 229.0, overall height 56.5, overall width 80.1, front tread 61.0, rear tread 61.0, rear overhang 60.6. Weight with gas, oil, water 5147 lbs. (53% front, 47% rear), weight/bhp ratio 13.7:1.

PRICE: Factory-suggested retail delivered price of test car equipped as described including federal tax but not state or local taxes, delivery and handling charges or freight \$6021.

IMPERIAL

ENGINE: Ohv V8. Bore 4.00 in. Stroke 3.90 in. Stroke/bore ratio 0.975:1. Compression ratio 10.0:1. Displacement 392 cu. in. One 4-bbl carburetor. Dual exhaust. Advertised bhp 345 @ 4600 rpm. Bhp per cu. in. 0.88. Piston speed @ max. bhp 2990 ft. per min. Max. bmep 173.02 psi. Max. torque 450 lbs.-ft. @ 2800 rpm.

TRANSMISSION: TorqueFlite automatic, three element torque converter, planetary gears; pushbutton operated; ratios 2.45:1, 1.45:1, 1.00:1.

CHASSIS: Front suspension—dependent, non-parallel, lateral control arms with torsion bars. Rear—longitudinal, unsymmetrical, semi-elliptic leaf springs. 11.00 x 14 tires. Steering: power, rack and sector with equal length tie rods; 3.5 turns lock-to-lock, overall ratio 19.38:1, turning diameter 48.1 ft. Rear axle—conventional differential, ratio 3.15:1.

DIMENSIONS: Wheelbase 129.0 in., overall length 225.8, overall height 57.0, overall width 81.2, front tread 61.8, rear tread 62.4, rear overhang 59.2. Weight with gas, oil, water 5425 lbs. (56% front, 44% rear), weight/bhp ratio 15.7:1.

PRICE: Factory-suggested retail delivered price of test car equipped as described, including federal tax but not state and local taxes, delivery and handling charges or freight \$6270.

CADILLAC

ENGINE: Ohv V8. Bore 4.00 in. Stroke 3.625 in. Stroke/bore ratio 0.906:1. Compression ratio 10.25:1. Displacement 365 cu. in. One 4-bbl carburetor. Dual exhaust. Advertised bhp 310 @ 4800 rpm. Bhp per cu. in. 0.85. Piston speed @ max. bhp 2900 ft. per min. Max. bmep 167.5 psi. Max. torque 405 lbs.-ft. @ 3100 rpm.

TRANSMISSION: Hydra-Matic automatic with fluid couplings and planetary gears; lever operated; ratios 3.97:1, 2.55:1, 1.55:1, 1.00:1.

CHASSIS: Front suspension—air suspension with independent long and short control arms. Rear—air suspension with four-link upper and lower control arms; 8.00x15 tires. Steering: power with recirculating ball; 4.0 turns lock-to-lock; overall ratio 19.5:1; turning diameter 45 ft. Rear axle—conventional differential, ratio 3.07:1.

DIMENSIONS: Wheelbase 133.0 in., overall length 225.3, overall height 59.1, overall width 80.0, front tread 61.0, rear tread 61.0, rear overhang 56.7. Weight with gas, oil, water 5179 lbs. (52% front, 48% rear), weight/bhp ratio 16.7:1.

PRICE: Factory-suggested retail delivered price of test car equipped as described, including federal tax but not state or local taxes, delivery and handling charges or freight \$7671.

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Classic Comments
by Robert J. Gottlieb

"A car that's unique, formal, modern." That's the order Bohman & Schwartz got in 1937. Here's one-of-a-kind.

BACK IN 1937, one of America's most famous theatrical personalities, Jeanette MacDonald, wanted a new car. Her requirements were rigid: it had to be different from anything else on the road, had to be a formal design, had to be built on a modern chassis, and had to have a passenger compartment high enough so that her husband could sit in it without removing his hat. The movie star conferred with Bohman & Schwartz in Pasadena, Calif., well known for their outstanding custom bodies.

Sketches were drawn of a town car to be built on a 1937 Packard chassis at an approximate cost of \$10,000. The finished car, though superb in every detail, revealed under close inspection that the rear tonneau is from an older town car which was probably grafted onto the Packard chassis.

Upon entering the driver's compartment, keynoted by its simplicity, we turned the key, depressed the starter button, and the Packard engine roared to life. Though in perfect mechanical condition, the noise factor in the front compartment was high, due perhaps to the huge expanse of high windshield glass and inadequate insulation. Depress the clutch, drop into low gear, and the car takes off with typical Packard smoothness. Steering is easier than in factory-built Packards. Acceleration through the gears is adequate and you have no trouble keeping pace with modern traffic. On the highway the brakes are adequate even at speeds up to 80 mph. They take hold with a minimum of foot pressure. In city driving, fuel consumption averaged 9.9 miles per



PHOTOS BY AL PALACY

gallon. On the highway at 50 mph, it delivered 13.1; at 75 consumption increased to 7.7 mpg.

Maybe it was psychological, but we felt as if we were driving a freight car. The huge windshield and excessively high top combined to create a feeling that the car is larger than it is.

The Bohman & Schwartz town car has a smoother ride than any other car we have ever driven, bar none. Dips and ruts are eliminated as if they were not there.

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THROUGHOUT THE YEARS there has been a tremendous turnover in classic car enthusiasts. A small group of people keep their interest in the old cars year in and year out; they form the nucleus of most organizations. The majority become interested in classics and drop out of the various groups after two or three years.

It leads to this result: every two or three years there is a new group of enthusiasts with the same old questions and problems. Valuation of automobiles is the chief question, while determining which cars are classic and which are not is the big problem. The same pitfalls are present in the form of sellers preying on the unwary and obtaining huge amounts of money for non-classic cars, or pawning off non-restorable cars as first-class merchandise.

It seems a shame to mention in connection with classics, political entanglements and intrigue. Unfortunately, "politics" are as much present in classic fields as in gubernatorial races. Politics and old cars don't mix.

On the brighter side, the present summer saw a great increase in the number of meets and caravans. Each year the cars appear to be in better condition and the tours better organized and planned, and each month, more cars are restored to original breathtaking condition.

BREAKING IN AN ENGINE carefully after an overhaul cannot be over-stressed. The classics weren't made to go as fast as modern cars and we know from experience that sustained high speeds result in fast wear. Twenty-five to 30 mph should be maximum speed for the first 500 miles after an overhaul. Fifty mph should be a maximum sustained speed for the next 2000 miles. Speeds in excess of this have ruined many an engine.

Everyone has heard about breaking in a newly overhauled engine, but have you ever stopped to figure out why this is necessary? All bearings and parts have been fitted to factory specifications, yet the well-trained mechanic cannot help but err in fitting a part .001 or .002-inch too loose or too tight. When a newly overhauled engine is "pushed" during break-in period, the parts get hot and expand. Take the crankshaft as an example. If a bearing is fitted .001-inch too tight, it will seize on the crank journal under certain conditions. These are (a) expansion of the journal coupled with (b) insufficient lubrication created by a thinning of the oil due to high temperatures. As the bearing becomes hotter the babbitt becomes liquefied. Under extreme temperature babbitt flows like water. If it starts to flow it will plug up the oil port. Once the oil port becomes clogged, lubrication ceases and you have nothing but a metal-to-metal contact resulting in a burned-out bearing.

The same theory as to high temperatures and proper lubrication applies to rings, wristpins, main bearings and other parts.

A FEW YEARS AGO antiques, as well as classics, could be purchased for very reasonable sums. Brass-bound Model T Fords were plentiful at \$200, and classics ranging from Packards to Duessenbergs were available for even less. The price of any commodity is governed by laws of supply and demand. The average price of a restored antique is

from \$2000-\$3000 and the same is true for classics. We who are interested in classics have a slight advantage in that there are more classics available than antiques, while at present, there are more antique than classic enthusiasts.

Mark these words well because they are intended as a prognostication. Within the next 10 years restored classics will double in value, unrestored classics will triple in value, and parts will be obtainable at premium prices only from established collectors, or those manufacturing concerns who make a specialty of manufacturing obsolete parts.

In other words, prices are starting on the upgrade. Some collectors feel that prices are at a maximum level now and that the only way they can go is down. I feel these people are wrong. If you want to get into the swim, this is the time to buy.

The proof is in the pudding. We have just experienced a recession considered to be major or minor depending on the particular field considered. Overall prices of specialty cars did not drop (with one exception, and there the reason could not be attributed to the recession), although it must be admitted that for a short while there was a slight increase in the number of available cars. The one exception is the Lincoln Continental. This marque has been steadily losing favor with classic enthusiasts and the decrease in Continental prices started long before the recession. At the height of its popularity Continental prices ranged from \$600 in poor condition to \$3500 in mint condition. We don't intend to incur the wrath of the Lincoln Continental Owners' Club, but facts are facts. Continentals have dropped in value and it is not difficult to purchase an unrestored Continental for \$250, while it is difficult to find a buyer ready, willing and able to pay \$1500 for a restored car.

Perhaps the reason is that the Continental, like some other marques, is a true classic but is on the fringe of the field. The average enthusiast recognizes a classic as a machine of functional design with a long hood and sweeping fenders which was built from 1928 through 1937. Cars of this description are the mainstay of the hobby. Older or newer machines, especially those with "a body design not in conformity with accepted theory" are always more affected by drops in value than "average classics."

The same is true with antiques—the newer the car the shakier the value. An owner of a truly vintage machine, such as a 1903 or 1904, will find that his investment is as good as cash in the bank. The owner of a later model, from 1915 through 1920 (if these can be called antiques), is subject to extreme financial fluctuation, depending on market conditions.

A concise summary of our basic thoughts is:

- As in any other field, you should know your merchandise well before buying.
- It takes a certain amount of study to be successful in a hobby as well as in a business.
- The classic car hobby will continue to grow with astounding rapidity.
- This is the proper time to invest in the hobby if you are so inclined.

In other words, the water's fine. Come on in. /MT

AMAZING PERFORMANCE
reported from new projected nose
spark plugs imported from

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What's Your Question?

(Many readers have wanted to know exactly what determines the asking price—and the closing figure—in the trade-in purchase of a new car. To get the factual, inside story, MOTOR TREND asked a salesman in a metropolitan dealership. Here is his revealing answer.—Editor)

"Is there really any such thing as a 'list price' on new cars?"

WHY IS IT IMPOSSIBLE to just walk into a dealership and say: "I want to buy a new car. That's my trade, there at the curb. How much will it cost me to get a new car?" You'll get an answer, all right—but it's a 100 to one bet that it won't be anywhere near the final closing figure. Why?

There are several reasons, but the principal one is this: There is no fixed list price on an American-manufactured automobile. [Recent national legislation, effective October 1st, requires that each new car bear a tag with the manufacturer's suggested retail price.] Most dealer organizations in the past have established their own highly inflated suggested list price. The laws of supply and demand, however, cannot be ignored. Overproduction and keen competition have dictated an average selling price hundreds of dollars lower than the suggested list. The by-product is gimmick artistry on a tremendous scale. Some dealers supplemented the suggested list sheet with one reflecting a higher base cost. This, in the salesman's vernacular, was the "pack." It has generally run \$100-\$200 higher than the suggested list. The new law should fairly well eliminate this blind "packing" practice, but as long as human nature remains what it is, there may still be a lot of horse-trading—with competition, dealer's markup, and trade-in value the factors at play.

THE AVERAGE PROFIT per deal is under \$300 on an average equipped automobile. The suggested list price, in most cases, has shown a profit in excess of \$800. What happens to the other \$500? The honest, reliable dealer will show it as a discount, on the order. Most salesmen will use it for a "mickey mouse" (originally an idiom for radio and heater that are inferior to factory equipment, the term is now used in reference to any contrivance in a deal).

Let's consider a hypothetical transaction: John Smith is in the market for a new Satellite Special. The "iron" he's driving is worth \$200 (Red Book, Blue Book, or market value)—the amount the dealer can purchase the car for at auction, or the amount he can sell it for to an automobile wholesaler, "as is"—i.e., without reconditioning.

When told that his present car has been appraised at \$200, John becomes very indignant. "Why, that's absurd!" he says. "The lowest offer I've had was \$700. I had two \$800 offers, and one of \$900. What are you trying to do—rob me?"

Al, the salesman, finally quiets him down and explains that he can give him as good a deal as anyone. He knows that the car he

figured for John at suggested list shows a profit of \$800. He also knows that any dealer in town will accept a deal at the competitive local average of \$300 profit. This leaves \$500 to play with. Adding this to the realistic \$200 value of the trade gives it a "watered" value of \$700.

Al asks John if he can see the competitive figures. He checks them against his own figures, and states: "Your \$700 offer is realistic. The suggested list price and equipment correspond with mine. One of your \$800 offers is a 'highball.' I'm sure that dealer will not deliver a car with so little gross. The other salesman will give you \$800 for your trade because he has a \$100 pack added to the suggested list price. Now, this last salesman could give you \$900 for your car, if his deal had a \$200 pack. According to the figures, it hasn't—so he has you on a ridiculous 'high ball'."

"What's a 'highball'?" asks John, thoroughly confused.

"It's a figure," Al explains "that is intentionally quoted higher than the dealer will pay for the trade. It is designed to prevent a customer from purchasing from a competitor, with the hope that he can be cut down to size on the next interview. A 'lowball' on the other hand, is a quotation on delivered price of the new unit, intentionally underquoted for the same reason. This latter practice is usually used when there is no trade-in."

WHAT CAN YOU DO to eliminate some of this hocus-pocus? If you're anticipating buying a new car, here are some tips on how to make it a little easier—and perhaps even a little less costly:

If you do not know a reliable salesman or dealership, inquire through your friends who drive the make of car you plan to buy. Try to determine how long the salesman has been with the dealership. If he's been with several dealerships in a short period of time, chances are he won't be around if you need his help when you return for service. Let him know why you want to make the purchase from him, and don't be secretive about previous shopping. He's on your side. He wants to sell you a car, and most likely if you're honest with him and lay your cards on the table, he'll do everything in his power to get you the best possible deal.

Ask him to figure his lowest price, including accessories, sales tax and license. Tell him you'll buy his car if you're satisfied that it corresponds closely to current market deals. Let him know immediately that you will trade in your car, as he may want to have it appraised while he's figuring the deal. Ask him to show you the current wholesale market value of your trade-in. Working on the above outlined basis, do not expect an allowance for your trade greater than its wholesale value. And if your car requires reconditioning, you can expect the appraiser to deduct the cost from the market value.

In the final analysis, variations in deals are seldom greater than \$25, according to extensive polls... so give the salesman who sold you the car the final chance to make the deal. You'll find that automobile men are, for the most part, human too.

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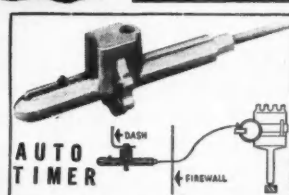
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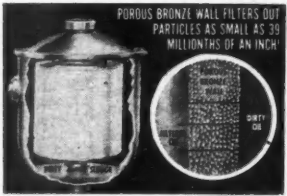
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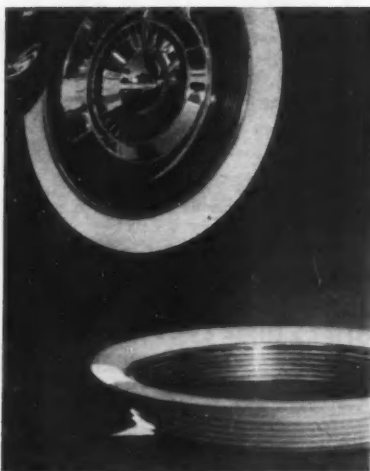
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TRENDS in New Products

(Information below is based on news releases from the manufacturer or distributor. MOTOR TREND has not tested any of the specific products listed, and therefore does not necessarily endorse them. Tested items are featured in our Product Use Tests.)

POWDERED IRON is the basis for Moraine Products all-metal brake shoes. Moraine, a division of General Motors, with years of experience in producing parts from powdered metals, experimented with 1500 different combinations of metals before they had the answer. Test miles equal to two round trips to the moon were run by Moraine engineers, and thousands of miles on police cars and taxicabs proved the worth of the all-metal brake for safe, sure, straight, fade-resisting stops for the nation's motorists. The initial output is being reserved for police cars and commercial vehicles subject to exceptionally hard driving.

WHITE OR COLOR sidewalls do not have to be built into a tire. They can be put on with a new wheel and tire trim accessory called ColorStripe. A two-inch strip of non-staining natural rubber in white, yellow, green, blue or red on a stainless steel trim ring fits 14-inch wheels in such a way that the rubber trim remains about a half-inch inside the



bulge of the tire and prevents curb scuffing. New car dealers are handling this accessory and the manufacturer's suggested retail price is \$19.95 per set of four.

SOLAR CELLS that convert sunlight into electricity furnish the power to operate Hoffman Electronics Corp.'s Trans-Solar radio. The tiny portable, measuring 5 3/4 x 3 1/2 x 1 3/8 inches, draws free power from sunlight or from the light of a 100-watt bulb. It may

be switched over to a long-life, four-volt mercury battery for operation in total darkness. Available in ebony, mocha, red, turquoise, espresso and pink through Hoffman dealers at a suggested retail price of \$75.

SPECTATOR SPORTS or just a walk in the great outdoors will be more enjoyable with a Prest-O-Seat. A 24-ounce cane, 32 inches long, made of high quality aluminum alloy and upholstered with durable Duran in a choice of colors, it unfolds with a flick into



a comfortable, sturdy seat which will support 500 pounds. A cane to lean on while standing, a comfortable chair for sitting, the Prest-O-Seat surpasses the old "shooting stick" in price, comfort, durability and weight. Available in maroon, green, black and brown, from Wamco Inc., 1342 W. Slauson Ave., Los Angeles, at \$9.95.

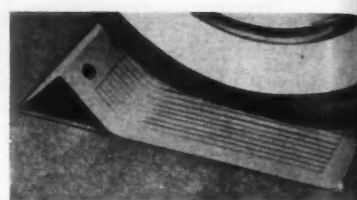
KOOL-IT, a liquid heat-transfer chemical concentrate designed to prevent overheating in gasoline engines, is a product of the Chemical Division of the Supersite Corp., Derby, Conn. The chemical, according to the manufacturer, is guaranteed not to damage rubber, gaskets or metals and has the property of speeding up and increasing the



ability of water to dissipate heat. One quart added to the average radiator system will keep engines cool even in bumper-to-bumper hot-weather driving.

Kool-It also contains chemicals to prevent water jacket rust and corrosion and mixes readily with all types of anti-freeze. With plenty of late vacationers caught in traffic jams, driving scenic mountain roads, or crossing the desert, this product looks like a necessary hot-weather item. It is available from the manufacturer at \$2.95 a quart.

SAVE THE REAR of your garage, or the odds and ends stored there with the Garage Auto



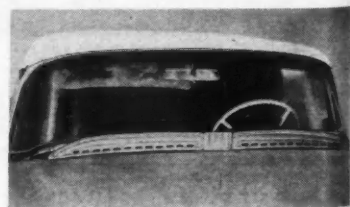
Stop Marker. Manufactured and sold by V. Jo Sales Co., P.O. Box 287, Geneva, Ill. the stop is steel, covered with high-visibility yellow rubber. It incorporates red reflecting "eyes" for easy line-up at night. Placed where your front wheel stops to allow the bumper to clear the end of your garage, the stop marker will not slip when the wheel rolls against it. Retail for \$4.95.

STUDIES INDICATE that poor support of the body, especially the back, tends to induce fatigue, discomfort and visual strain. A device called the Mark-Fore Adjustable Back Aide has three adjustments to suit individual height and figure types, with a separate



control for each adjustment. Made of Fiberglas mesh over an alloy steel frame, the user can control sitting angle, firmness and curve of spinal support, and sitting height. It is manufactured by the Market Forge Co., Everett 49, Mass., and sells for \$12.95.

HAZARDOUS AND PESKY annoyance of a windshield plastered with bugs, dust or snow during fast highway travel can be eliminated with a new device called the Wind-Wall deflector. This deflector extends the full width of the hood and is secured to the top of the firewall or the trailing edge of the hood. When the car is in motion it deflects the air stream completely over the windshield area. The primed-finish model at \$3.95 may be painted to match the car. It is also available



in chrome finish at \$4.95. The deflector is marketed by Haskell Benson Co., 225 E. Erie, Chicago 11.

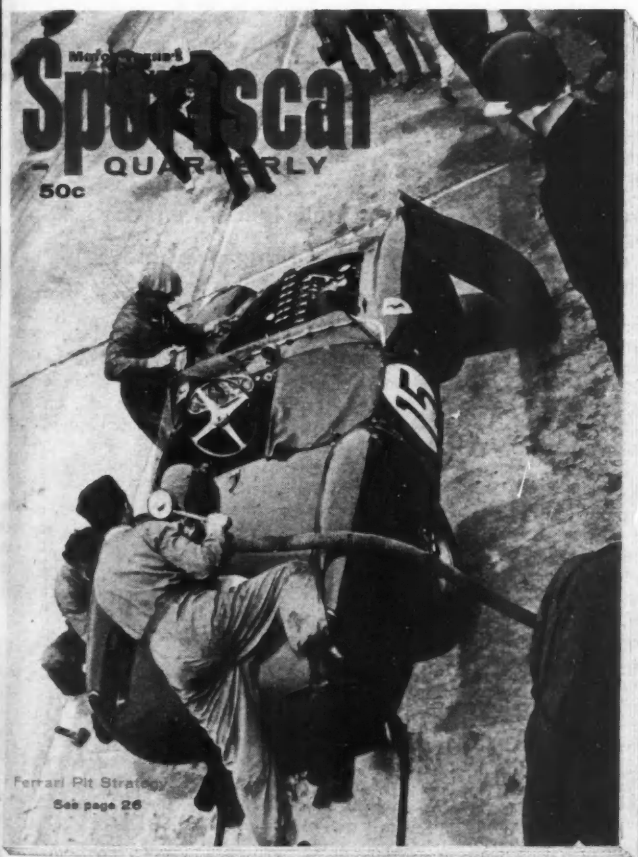
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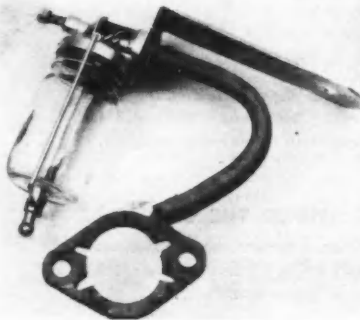
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PRODUCT USE TEST

De Paolo Turbo-Injector atomizes top oil lubricant

H EAT ZONE AREAS of the upper cylinders of internal combustion engines produce harmful by-products and make lubrication of this area difficult. Very little crankcase oil finds its way into this inferno, resulting in high engine wear and low efficiency. Carbon-coated valves, especially around the exposed stems, and fantastic wear of the cylinder in the upper ring area, shorten engine life.

A heat-resisting, non-acid, detergent, lubricating oil that blends with all grades of gasoline is the result of extensive research by the De Paolo Engineering Co. of Long Beach, Calif. Bearing the name of the famous racing driver who developed it, the De Paolo Turbo-Injector utilizes manifold vacuum to meter this conditioning oil into upper cylinders.



The test car, a 1958 Pontiac Bonneville, was selected because it had 3500 miles of slow city driving on it—surely the engine could stand a cleaning out topside.

A laminated gasket containing the injection tubes was installed between the carburetor and the intake manifold. This gasket is quite thick (about $\frac{3}{16}$ -inch) and we had to back off about four threads on the manifold studs so we could get the nuts back on. This is a little tricky and care must be taken not to break the studs. A stud remover is best but we suggest a liberal application of penetrating oil or "liquid wrench" before an attempt is made to turn these studs, especially on older engines.

For single-throat carburetors, any convenient location of the supply tube connector is up to the user, but on four throats, the conditioning oil is injected into the primary (small) throats, usually located toward the front of the engine. The oil supply bottle was mounted on one of the generator bolts, not by choice but because the short hose furnished with the kit would not permit firewall mounting.

We know that one of the best ways to accomplish top oiling is to inject a fine mist of the lubricant into the fuel-air mixture. The De Paolo system does this very well and in direct ratio to the demand.

Before treating our test engine, we warmed it very carefully to rid the exhaust system of most of the moisture. We then raced the

engine while holding clean white cards near the exhaust pipes. The cards showed no trace of oil, carbon or condensation. Following the hookup of the De Paolo conditioner unit, we proceeded with the conditioning procedure outlined in the instructions. This calls for racing the engine while holding the oil supply valve wide open. Fresh white cards held near the exhaust pipe ends started to show carbon deposits and brown varnish stains. After one bottle of conditioner (two are recommended by manufacturer) was consumed, our test cards again remained clean, the engine idled better, and seemed more quiet, although with such low mileage it was not a noisy engine to begin with.

Once the initial conditioning is complete, the control valve on the supply unit is returned to normal, reducing the consumption of top oil to about one bottle (four ounces) per tank of gasoline. Two tiny blade-type impellers in the metering head help atomize the oil and control the amount by opening or closing the supply jet as engine demand increases or decreases.

Initial conditioning is also possible by pouring the oil through the carburetor while running the engine fast enough to keep it from stalling, and then adding four ounces to each tank of gas to maintain top lubrication. We tried the pouring system on a rather tired Mercedes 190-S and noticed the engine was more snappy and idled better.

A few hundred miles can give no indication of engine wear and we had to rely on the experience of several reputable mechanics. None had torn down an engine using the De Paolo oiler but they did say that engines so equipped held their tune-up longer.

The dispensing reservoir is very well made, but we would like to see a container of larger capacity that would fill from the top. As we mentioned before, a longer hose would allow mounting farther away from engine heat. We found that the glass jar was too hot to remove with bare hands when it was mounted on the engine. We know that there is a need for top oiling and the De Paolo Turbo-Injector at \$12.95 seems to do the job. Twelve-ounce cans of conditioning oil are available at \$1.25 each at some dealers or direct from De Paolo Engineering Co., 2630 E. Spring St., Long Beach, Calif.

Non-liquid battery undergoes lab test

C ONCURRENTLY with the submission of a full-page ad for a new so-called "waterless" battery in MOTOR TREND, we asked the manufacturers to submit one of their batteries for test. We were quite querulous about such lavish claims as "Permanently sealed . . ." "Eliminates forever the nuisance of adding water . . ." "Made with non-liquid, silicone electrolyte . . ."

Upon receipt of a sample battery, we turned it over to an independent testing lab, who made what is known as a "wet chemical

analysis." This is their report, in part:

"The end cell was removed from the battery. The acid was poured from the cell cavity, disclosing a thick gelatinous layer in the bottom. The plates were conventional lead plates.

"The clear acid was reserved for analysis, and . . . the gel was then separated and washed by centrifuging . . . The gel was found to be silica . . . The presence of sodium in the electrolyte and the gelatinous nature of the silica indicated that sulfuric acid had been added to a solution of sodium silicate. The acid reacted with the sodium silicate to form silica gel and sodium sulfate.

"The results of the analyses indicated the following constituents present in the cell in per cent by weight:

Sulfuric Acid	32.8
Water	64.8
Sodium Sulfate	0.8
Silica (containing lead oxide and lead sulfate)	1.6

"The effective electrolyte is a sulfuric acid solution containing a small amount of sodium sulfate. There was no evidence of a silicone in the electrolyte. . . The friction plugs that closed the cells were found to have breather ports."

Conclusion? We refused the ad.

Jet Flame Igniters employ chamber-firing principle

L IGHTEING THE FIRE in a gasoline engine is the function of a spark plug. Many variations of this handy but controversial bit of ceramic and steel have been offered for sale with as many claims as there are motorists. Western Jet Ignition Distributors, Inc., produce a spark plug called "Jet Flame Igniters."

The principle of these plugs is a firing chamber within the body that starts by igniting a small amount of the air/fuel mixture and spewing flame out of three holes to complete the combustion. The manufacturer claims that better cooling of the electrodes is accomplished by swirling action of the fuel charge entering the firing chamber, and more complete combustion occurs because of the blast of flame into the fuel mixture. This, they say, will result in better mileage due to more horsepower, and longer plug life.

MOTOR TREND's test car was running very well on a set of plugs from a leading manufacturer, even though they showed they were about one heat range too hot. We replaced them with a set of Jet Flame Igniters of the same heat range and acquired a beautiful case of detonation. However, another set, one heat range colder, solved the detonation problem and the car ran well, but we could not notice any improvement in performance.



A Mercedes 190-S with 50,000 hard miles on the engine, that had given plug trouble in the past, was tested with a set of Jet Flame Igniters. It ran well, idled smoothly, but showed some signs of burning after a hundred miles of city and highway driving.

One of our motoring friends, trying to

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postpone a badly needed ring and valve job on his Porsche 1500, did solve his plug oiling and fouling problems with a set of Jet Flame Igniters. His was not a complete solution, but he was able to run longer without a plug cleaning than he did with conventional plugs.

The Jet Flame Igniters are very well made. The ceramics are smooth and non-porous and the manufacturer states that the electrodes are of special nickel alloy.

In the tests we conducted we failed to notice any improvement in performance under ordinary conditions, although we saw proof of exceptional performance under a special condition. The claim of three to five times the life of an ordinary plug without adjustment is warranted with a money-back guarantee by the manufacturer. This longer life may be possible under certain conditions, but we did see evidence of burning and fouling and an indication of a narrow heat range.

Jet Flame Igniters are available from Western Jet Ignition Distributors, Inc., 6022 W. Pico Blvd., Los Angeles 35, at \$3 each.

Loadomatic Shock Springs eliminate overload bottoming

OVERLOADING your pleasure car or pickup truck can be dangerous and expensive. Bottoming over normal highway dips or drive-ways while carrying that extra load, whether it be passengers, trailer, or just a load of bricks, will bend springs and make handling difficult.

Superior Industries, of 7260 Atoll Ave., North Hollywood, Calif., is manufacturing the Loadomatic, a set of steel coil springs designed to fit over most airplane-type shocks currently in use on the majority of cars.



Our test vehicle, a 1958 Ranchero, was loaded with bricks until it would bottom at normal speed while negotiating some of the "drainage ditch" intersections so common in the Los Angeles area. Thirty minutes with hand tools and a jack capable of lifting the body to the limit of the shock extension were all that were required to install a set of Loadomatics. With the same load, and over the same course, our test car showed greatly improved handling, lack of sway, and no bottoming.

Available through most distributors at \$15.50 per pair, Loadomatics will also help that car or truck whose springs are sagging from the abuse of overloading. The additional spring pressure will restore the chassis to its normal level fore and aft, improve handling, prevent dangerous bottoming, bring that headlight beam back to the correct angle, and still maintain good riding quality.

For those cars that use lowering blocks, thereby decreasing the bounce distance of the axle, Loadomatics will provide that extra margin of springing to prevent excessive bottoming. Boat trailers and mobile homes equipped with standard size airplane-type shocks can also use these springs for overloads.

Electrotach and Radson tachs are accurate, easy to install

COUNTING THE PULSE BEAT of your engine is a simple matter with the new electronic tachometers available. The Radson Model V-812, for eight-cylinder, 12-volt engines, and the Electrotach "Dual Purpose" Model 30, were the subjects of our tests. Both of these instruments are "pulse meters" designed to measure the number of times the coil discharges, and convert the frequency into hundreds of rpm's.

The Radson has a full, easy-to-read scale, can be bracket-mounted from the top or bottom, but must be grounded by the mount. It is a transistor-type meter requiring energizing voltage supplied by the car battery. A $\frac{3}{16}$ -inch hole must be drilled for the single-ball mount, but only two wires, one to the plus side of the battery, the other to the low voltage coil terminal, are needed to complete the hookup. Maximum scale is 6000 rpm.

Electrotach's "Dual Purpose" Model 30 has a magnetic base and is more of a tune-up meter than a dash instrument, although they make a round dial type for bracket or flush mounting that is easy to read but will operate only for the number of cylinders for which it is calibrated. Battery voltage has no effect on the Electrotach meters, as they are pulse-relay operated, the relay being energized by a tiny mercury battery. This battery, good for about 2000 hours, is available at radio parts dealers.

Supplied with two eight-foot leads and terminal clips, hookup is simple: one wire to ground, one to low voltage of coil, forget polarity. It can be used with magneto or low voltage stud and grounding the other lead.

Two scales, the top reading to 8000 rpm for six-cylinder engines and the lower to 6000 for eights, make reading a little confusing. Four-bangers are read on the lower scale by doubling the reading, which means that full scale for fours reads to 12,000.

MOTOR TREND tested these meters against a sender-type Sun tachometer. The needles tracked evenly and were quite stable, indicating that they were well dampened, but the Radson ran high at steady rpm. Abrupt acceleration produced equal readings on both test instruments while the Sun lagged behind. There is no illumination for night use.

Dixon Products Co., Vashon, Wash., manufactures and markets the Electrotach Model 30 for \$37.95, and Radson Engineering Corp., of Macon, Ill., quotes an f.o.b. price of \$39.95 for the V-812. /MT

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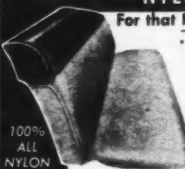
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SELL

LINCOLN CONTINENTAL post-war V-12. Complete & unmodified; w/w's. Good cond.; 72,000 mi. Some recent work. \$795. Also 2 parts sedans. Ben Bloom, 6202 Bannockburn Dr., Bethesda 14, Md. 25 BUICK 4-cyl. 4-dr. sed. in exc. orig. cond. Orig. Brewster-green finish. Good tires with extra rim. Historical license. Fine running cond. Best offer over \$300. Herman Dittmar, 914 E. Lake St., Petoskey, Mich.

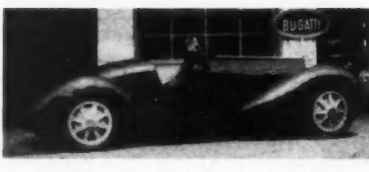
'30 MODEL A rdstr. Restored; extra parts. \$700. Odis H. Kent, Ave. B, West Point, Ga.
HUNDREDS OF AUTO ADS on almost every car from 1917 to '37. Many in color. Complete list 15c. Roger Hampshire, 909 Pratt, Barry, Ill.
'02 SEARS Motor Car, completely restored—rare collector's item. Have orig. Sears catalog from which car was ordered. All for \$5000; pix on request. Max Toliver, Box 1, Orleans, Ind.

'34 PIERCE-ARROW V-12 streamlined 2-dr. Silver Arrow production model. Orig. exc. cond. thruout. Engine runs like Swiss watch—can be driven anywhere. \$850. W. C. Armstrong, 26670 Laigo Shore Dr., Malibu, Calif. Phone Glenwood 7-2441.

'26 PIERCE-ARROW rdstr. Engine just oiled. Good running gear, body, fenders, etc. Side curtains, tools, etc. included. No reasonable offer refused. Pix \$56. Alfred Goodman, 2827 Winchester Ave., Philadelphia 36, Pa.

'30 MODEL A pickup. Easily restored—runs good, good tires & body. Also: '32 V8 radiator & shell, bumpers. '28 Model A fenders, glass, bumpers. R. L. Bunn, Dows, Iowa. Phone 1625.

BUGATTI TYPE 43 supercharged rdstr. in perf. mech. cond.; very fast. New tires; body recently



built by Graber of Switzerland. \$1950 f.o.b. Genoa, Italy. V. A. Corradini, Albergo Dei Cavalieri, Piazza Missori, Milano, Italy.

'56 DELAHAYE 4.5-liter—ultra-modern, with Franay body Like new, 7800 mi.; Coral box. Photos on request. 1950 f.o.b. Genoa, Italy. V. A. Corradini, Albergo Dei Cavalieri, Piazza Missori, Milano, Italy.

'36 CHRYSLER Airflow. All orig. in running cond. \$750. Bruce Waterman, 626 1/2 N. St. Andrews Pl., Hollywood, Calif. Phone HOLLYWOOD 5-9690.

'37 LA SALLE 4-dr. sed. Rebuilt & modified engine, rebuilt front end, new kingpins & bushings, new brakes. Exc. transmission & rear: 6-spl nylon tires. \$175. A. Ward Shanen, 2444 S. Orkney St., Philadelphia 48, Pa.

CLASSIC & ANTIQUE CAR Sales Catalogs: Packard, Chrysler, Lincoln, Cadillac, Pierce-Arrow, Buick, Orphan & Foreign cars; minimum \$5 each. Also MoToR (N.Y.) Annual Numbers. Details for large, stamped, addressed envelope. A. E. Twohy, 400 N. Kenmore, Los Angeles.

AUTOMOBILE PHOTOS—of the world's finest cars & coachwork, American & Continental, of the classical era. Not snapshots. Listings 25¢. G. A. Moffitt, 306 W. 94th St., New York 25.

1000 BOOKS on Classic & Antique Cars, Automobile Engineering, Motor Racing: Owners Handbooks & Factory Shop Manuals, Catalog 25¢. Vivian Gray, The Motorist's Bookseller, Hurstpierpoint, Sussex, England.

FORD T PARTS—widest selection, lowest prices. Large free listing available. Also Ford A bargain listing of mechanical parts available free. E. Hemmings, Quincy, Ill.

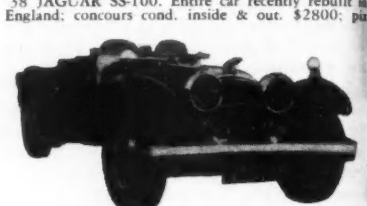
'38 LA SALLE Fleetwood conv. rdstr., restored to absolutely mint, showroom cond. Alum. racing engine. One-of-a-kind, \$1500. Only interested parties. Sheldon J. Lewis, 61-33 213th St., Bayside, L.I., N.Y. Phone BA 9-7829.

ORIGINAL MAGAZINE ADS & color prints of all classics, non-classics, 1924 thru '42. MoToR (N.Y.) Annual Show numbers & monthlies 1925 thru '42. Complete listing 25¢. Sheldon J. Lewis, 61-33 213th St., Bayside, L.I., N.Y.

'29 MARMON-ROOSEVELT 4-dr. sed. Everything orig; exc. for restoring. Body & engine need re-

storing; uph. always kept covered, whole interior good. \$100. Dr. Roy Keith, 15 W. Main & Brevard, N.C.

'35 CHRYSLER Airflow 4-dr. sed. Good engine body & tires. Needs paint & uph. work. \$200. Dr. Roy Keith, 15 W. Main & Brevard, N.C.
MERCEDES-BENZ 300-B 4-dr. rollover, 24,000 mi. Will sell all or part. Many other wrecked foreign make cars—whole or part. All Auto Parts Co., 5089 San Fernando Rd. W., Los Angeles 39. Phone Chapman 5-1843.
'38 JAGUAR SS-100. Entire car recently rebuilt in England; concours cond. inside & out. \$2800; pix



50¢. All inquiries answered—no trades. Frank Bray, Rt. 3, Box 220, Carmel, Calif.

'57 CORVETTE ENGINE. New valves, springs, solid lifters, pushrods, inserts, mains, rings, cam, bushings, etc. Never run since rebuilt. \$275; pix on request. B. Ledbetter, 1015 W. 17th St., Texarkana 7, Tex.

NEW DUAL-POINT DISTRIBUTOR for '55, '58 Chevrolet V8, \$27.50 prepaid. B. Ledbetter, 1015 W. 17th St., Texarkana 7, Tex.

'57 CORVETTE ENGINE & '57 Thunderbird engine, with or without transmission. Priced reasonable. B. Ledbetter, 1015 W. 17th St., Texarkana 7, Tex.

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'48 LINCOLN CONTINENTAL cpe., with orig. V-12 engine. Body & trim in exc. cond.; completely equipped. Send 25¢ for pix, price & complete description. Edward F. Doran, 6615 Royalcrest Dr., Dallas, Tex.

MCCULLOCH BLOWER used less than 500 mi. on Mark II—too hot. Guaranteed perf. \$175. McCormick, Pres., Hotel Broadview, Wichita, Kan.

'39 BUICK Roadmaster conv. phaeton in exc. cond. 41 miles—due for ring & valve job. Make offer. Charles M. Lawwill, 2095 6th Ave., Yuma, Ariz.

'37 CORV 812 2-pass. Sportsman. Beautiful factory restoration—black lacquer, white nylon top, leather interior, chrome exhaust headers. \$2600. E. L. Bates, 1306 McKay Tower, Grand Rapids, Mich.

'48 LINCOLN CONTINENTAL cabriolet in mint cond. Black with tan top. Automatic radio, fog windows, o.d., Double E w/w's, 14,000 mi. Asking \$3000. M. J. Harkins, M.D., 437 Main St., Lewistown, Me.

'26 STAR 4-cyl. New paint; exc. engine, uph. tires. Only 40,000 mi. Tools, chains, '26 license plates. \$1000. Robert M. Shirley, Rt. No. 7, Westminster, Md. Phone Tilden 8-9627.

'06 BUICK Model F 2-cyl. chain-drive. Restored to showroom cond., has won many trophies. Car has been used very little. \$3500. J. E. Alverson, Box 3551 S. Atlanta Rd., Smyrna, Ga. Phone SY 9-5089.

'28 GRAHAM-PAIGE Big 6 2-dr. 5-pass. custom conv. Good cond.—orig. paint, pigskin uph.; 55,000 mi. Hi-Speed gearshift; luggage rack; 2 spares.



\$1200. S. E. Butterworth, 2073 Grace Ave., Hollywood 28, Calif. Phone RYan 1-6316 or HOLLYWOOD 7-9691.

'22 SUNBEAM spt. touring, imported from England in '56. Not restored, but complete & in good cond. Orig. equip't, manuals, etc., included. \$750. J. E.

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Alverson, Box 3551 S. Atlanta Rd., Smyrna, Ga. Phone SY 9-5089.
18 PACKARD Twin Six rdstr. Unrestored, but



complete & running. \$1750. R. Funk, 4115 Walnut Lake Rd., Orchard Lake, Mich.
30 PACKARD Super 8 phaeton. Mech. good, no rust; will go anywhere. Lots of tires, some spare parts. \$650 or best offer. W. P. Bushman, R.C.A.F. Station, Saskatoon, Sask., Canada.

39 LINCOLN K 7-pass. sed. Alum. body, new paint, twin sidemounts. Perf. cond.; less than 18,000 mi. \$2000. Will deliver. Arnold Klassen, 1436 Bayview St., Milton, Phone MI 8-2247.
47 LINCOLN CONTINENTAL V-12 conv. Rebuilt engine, numerous new parts. New top, 5 w/w's barely used; everything else like new. Must sell. \$1600 or best offer. Ben Phillips, 23 Sweet St. N.W., Grand Rapids, Mich.

48 LINCOLN CONTINENTAL cpe. with '50 Olds V8. o.d. Mech. exc., body good. Car at Quonset Point, R.I. \$1350. Write Lt. T. L. Lindsay USN, VS-39, c/o F.P.O. New York, N.Y.

23 STANLEY STEAMER Model 740 7-pass. touring car. Exceptional cond., new lacquer. Empire boiler, 36x6.50 tires. \$3200 firm. F. B. McPhillips Sr., 3602 N. A. St., Tampa 9, Fla.

47 LINCOLN CONTINENTAL in exc. cond. Black finish, w/w's, radio. Asking \$1500—will give any reasonable guarantee. All letters answered. J. E. Bayles, 130 Ellsworth Blvd., Kensington, Conn.

38 PACKARD V-12 conv. victoria. Exc. orig. cond. thruout—new top, w/w's, r & h. Suitable for daily use or show. William Klein, Jr., Elizabethtown, Pa.
36 PIERCE-ARROW V-12 cfb. sed. Power brakes & radio; exc. tires. Clean & in good shape; can be driven anywhere. Spare parts. \$950. Robert Schertle, 756 Hilldale Ave., Berkeley 8, Calif. Phone LA 4-4444.
NEW MICRO MIDGET. Indian Arrow engine. Fiberglass & alum. construction. Car meets N.M.M.A.



minimum rules for Light Class. \$600. Pix on request. Danny Lamb, 414 E. Stewart St., Bloomington, Ill.

Tomorrow's Cars

continued from page 41

sumption is yielding to development, though it is not quite as good as a piston engine. But fuel consumption is still not hopeless or so bad the turbine cannot ever be made competitive... the free piston engine is certainly a contender of almost equal magnitude as the gas turbine... keep in mind that we have never yet had a powerplant that completely displaced any other powerplant. For example, water, the original power source, now produces more power than ever before."

A little while later we were talking with Joseph H. Bidwell, Head of Engineering Mechanics Department of GM's Research Staff. During the interview Bidwell covered a lot of automotive territory, from which we abstracted the following opinions: "We could make a Cadillac handle like a Corvette if we could do it without consideration of mechanical controls... We are painfully aware of interior comfort [problems] of which noise is the real headache... We might be able

SELL OR SWAP

'34 PIERCE-ARROW V-12 & Cadillac limousines. Restorable or good for parts. \$150 each, or will trade for '11 Cadillac touring body & top bows. Glen Fogelstrom, 543 Blair Blvd., Eugene, Ore.
'36 CORD 810 rdstr. Completely orig., transmission re-worked; good running cond. Spare parts, catalogs included. Will take trade. Bill Plunkett, 1020-D Eugene Dr., Fullerton, Calif. Phone LA 5-6648.
'33 CADILLAC V-16 limousine in exc. cond. Best offer over \$600. May consider trade. Also have parts for '27 Buick. Clifford Farkas, 332 S. 4th St., Mt. Vernon, Ill.

'40 BUICK conv. (American) rebuilt engine. Transmission noisy, body average, front restored, rear untouched, top good. Car used daily. \$250, or swap for closed car. Jerry Davies, 4244 Bellechasse, Apt. 11, Montreal, Canada. Phone RA 7-5829.
MC CULLOCH SUPERCHARGER (on '37 Packard) with 2-bbl. carb & manifolds, suitable for '36, '37, '38 Stude 289 engine, for \$150 plus your carb & manifolds. J. M. Cline, P.O. Box 987, Billings, Mont.

'30 CHRYSLER Model 66 4-dr. sed. Exc. general cond.—new tires, refinished wood spoke wheels. \$350, or trade for good '47, '48 Buick conv. F. Joseph Fox Jr., 31 Deerfield Pike, Bridgeton, N.J.

'30 PACKARD Super 8 touring. New uph., top, paint, chrome; engine o'hauled. \$1075. Also '31 Auburn conv. sed. Swap one or both for Rolls-Royce touring. Paul Henry, R.R. #2 Box 101, Clinterfield, Mo.

TRUCK CATALOGS: Clydesdale, Esco, Kleiber, LeMoon, Menominee, Netco & a few other makes before '40. Can trade some early auto items for material I need. John Montville, 2995 Botanical Square, Bronx 58, N.Y.

WANTED

PARTS for '22 Studebaker Special 6 touring—rear doors & body, bow, tires 32x3.50 or 4.00, headlight lens, ignition/light switch, other misc. State price & cond. Louis W. Luedtke Jr., 222 Ridge Rd., Lake Geneva, Wis.

'30-'39 PACKARD 12 or Super 8 conv. cpe. or rdstr., running & restorable. Send details & pix. Might consider other top make or model. Lt. N. R. Skipper, 3rd ATS, Box 2, Charleston AFB, S.C.

'41 CADILLAC Fleetwood 6-pass. sed. Body & interior must be immac., engine can be fair. Will pay top price for outstanding auto within 1500 mi. of Calif. Ens. J. H. Shiver, USS Rogers (DDR 876), c/o F.P.O., San Francisco, Calif.

CASH for pre-war auto catalogs, show annuals, radiator emblems—any make. Highest prices for Rolls-Royce, Cunningham, Cadillac, Imperial, Brewster, Isotta-Fraschini, Pease—big-car literature. Lewis A. Mayer, Munith, Mich.

CATALOGS, brochures & folders of classics, Motor Annuals 1920 thru '40, ATJs, Motometers, etc. Paying top prices. State material offered & asking price. Sheldon J. Lewis, 61-33 213th St., Bayside, L.I., N.Y.

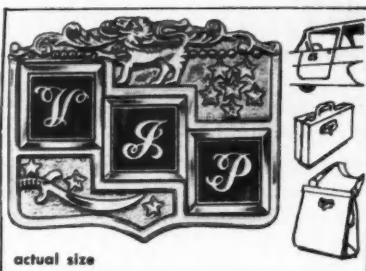
ANY LINCOLN or Lincoln Zephyr (except Continental) prior to '41, restored or in good cond. Send complete description, price in 1st letter. Ed Doran, 6615 Royalcrest, Dallas 30, Tex.

'40 LA SALLE conv. Send pix, description & firm price (not bargaining price). Joe Hess, 599 Heine-man Blvd., Mansfield, Ohio.

to give you an air conditioner by sealing the car and eliminating window lifts... Eventually you will have brakes that equal the engine... The differential is something we're stuck with to turn corners... but the relationship of parts at the rear can, and may well be changed... so many people are concerned with it, we should soon see a completely adjustable driver's section... [On instrumentation] anything that can be done automatically, leave the driver out of it. There's no point in telling him it's even being done. We don't tell him which gear an automatic transmission uses as it shifts... There's a lot more attention to those items the driver *must* control..."

And what about replacing the driver by the many newly announced automatic controls or electronic roadways?

Hafstad had one answer to this question in a paper delivered in late 1957, in which he indicated that drivers would be needed for a long time to come. He said, "How else can you get such a versatile mechanism [the driver] producible in quantity, with so little capital investment, by such low-grade help and such pleasurable means?" /MT



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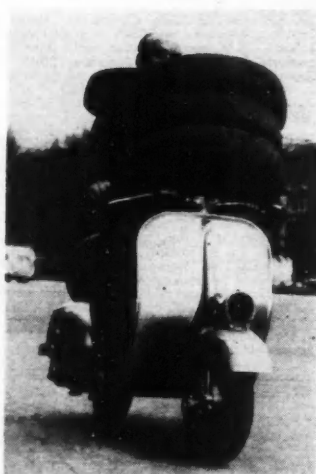
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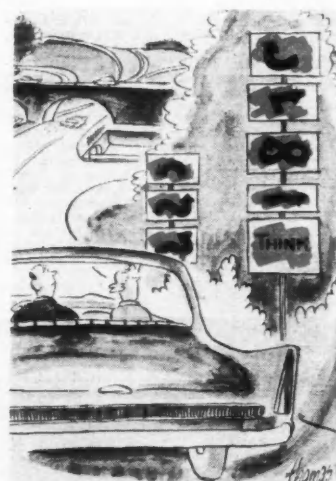
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ESCAPE ROAD

Edited by
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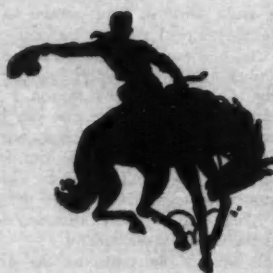


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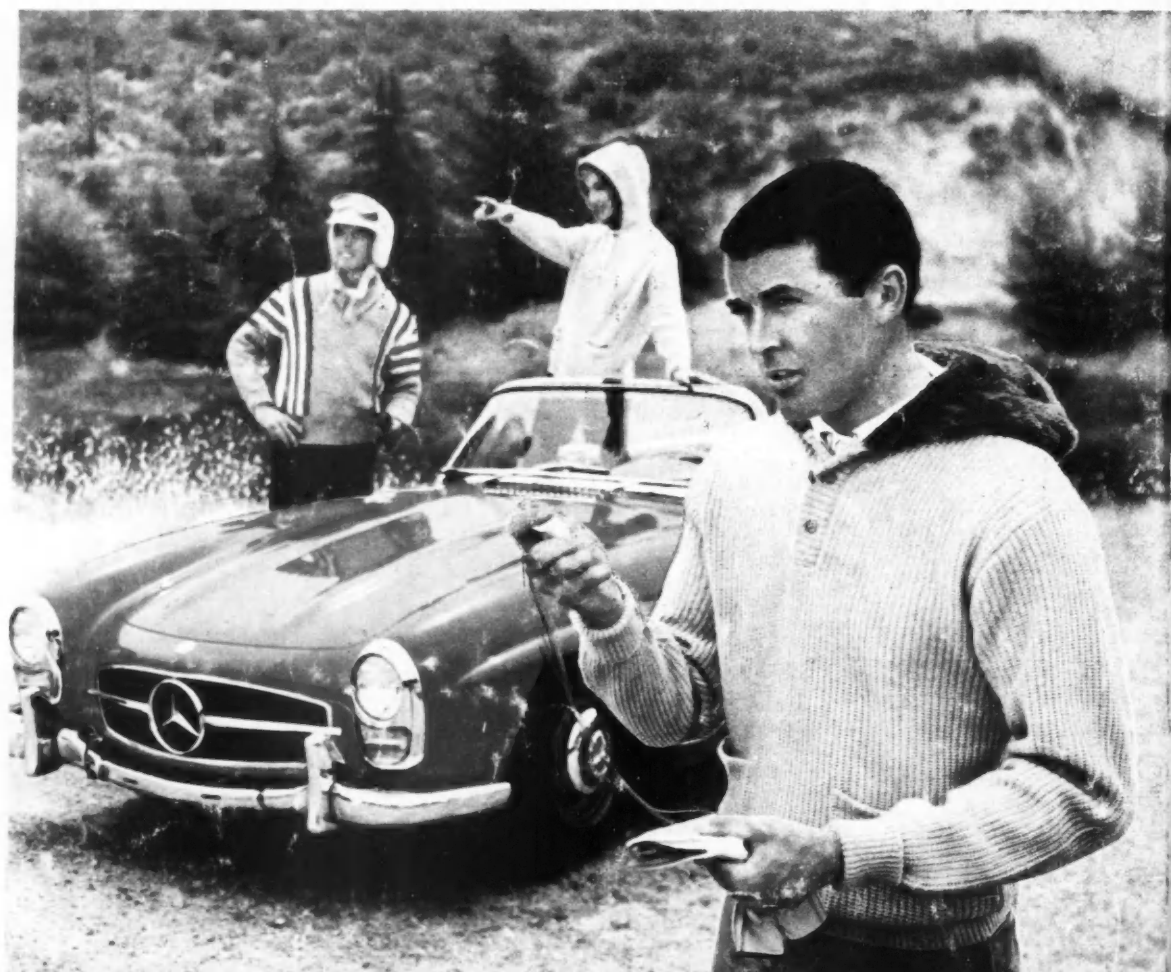
Nicky crosses the finish line after completing 1883-mile Run from Los Angeles to Galveston.

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